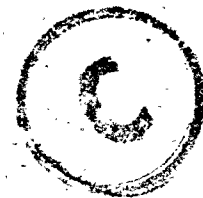


Annual Report on Vaccination

King Institute

1915-16



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3. *Vaccination Department.*—The inspection work of the Deputy Sanitary Commissioner during the year was, on the whole, satisfactory. If the full sanctioned number of Deputy Sanitary Commissioners had been on duty, many more tracts where vaccination was reported to be unsatisfactory would have been inspected and the existing defects rectified wherever possible. I agree generally

with the Deputy Sanitary Commissioner in his remarks about vaccinators in paragraph 4 of his report. The question of the improvement of the pay and prospects of vaccinators and Deputy Inspectors of Vaccination has been pending for a long time past and the sooner it is settled the better it will be for the vaccination department of the Presidency. The recruitment of a proper staff of vaccinators on the present rates of pay is becoming difficult year after year and unless their position is improved on the lines laid down in the general scheme now under the consideration of Government, there will, I fear, be a retrogression in the quality of vaccination work turned out in the Presidency as a whole. I think it therefore very essential that the introduction of the new scheme should no longer be deferred.

The total vaccination work performed during the year showed an increase both under "Primary vaccination" and "Re-vaccination". The one notable feature is an increase of 92,578 cases in the total number of re-vaccinations performed during the year over those of the previous year, a sign certainly of appreciation by the people of the effect of re-vaccination during epidemics of small-pox.

I have the honour to be,

Sir,

Your most obedient servant,

W. A. JUSTICE, Major, I.M.S.,
Sanitary Commissioner, Madras.

REPORT ON VACCINATION IN THE MADRAS PRESIDENCY DURING 1889-90.

STAFF OF THE VACCINATION DEPARTMENT.

1. During the year no important changes were made in the constitution of the vaccination staff. In *Local Fund Circles*, 32 Deputy Inspectors of the first class, drawing Rs. 60. and Rs. 70, and 20 of the second class, on Rs. 40 per mensem, formed the inspecting staff; whilst vaccinators of the first and second class, drawing Rs. 18 and Rs. 10 respectively, carried out the executive work. In *Municipalities*, 106 vaccinators were employed on salaries varying from Rs. 10 to Rs. 18, according to class. Government employed 6 vaccinators in *Cantonments*, and 22 in the *Hill Tracts* of Ganjam and Vizagapatam.

2. The areas under the charge of each subordinate employed by District Boards are shown in Table XII attached. It will be seen that they differ within considerable limits, although there is a certain amount of tendency to uniformity. The question of area, of course, is not a simple one; as often apparently disproportionately large tracts under one man's charge may be chiefly of uninhabited mountain ranges, &c., whilst those entrusted to another, of actually smaller area, may include well inhabited villages but small distances apart. No conclusion need, therefore, be arrived at solely by a consultation of this table; but I have thought the information conveyed may be useful to local authorities, with reference to questions that must from time to time be referred to them. Thus, during the year, in consideration of the very large areas under the two Deputy Inspectors attached to the Malabar district, it was found necessary to appoint a third man.

3. Two females were employed by District Boards as vaccinators on Rs. 18 and Rs. 10 per mensem, and five by Municipalities on Rs. 10 each, except the woman at Cocanada, who receives Rs. 18. It is most desirable that the employment of female vaccinators be extended; indeed, where vaccination is compulsory, I think this provision should invariably be made. Possibly, as the cases where the services of a female vaccinator would be essential are limited, it would be feasible for Municipalities to unite in paying female vaccinators who could serve in each Municipality for a certain limited time.

QUANTITY OF WORK EFFECTED BY THE VARIOUS BRANCHES OF THE DEPARTMENT.

4. During the past official year 875,748 * persons were vaccinated; in 831,499 cases the results are reported to have been successful. This is the greatest number hitherto recorded, and exhibits an increase of 61,758 successful cases when compared with the outturn of the last official year. This highly satisfactory result may be ascribed to the more general use of animal vaccine lymph, and the consequent partial cessation of difficulty in procuring supplies of the virus, as well as to the special urging of attention to the question of vaccination conveyed in reviews by Government of District Board and Municipal Administration Reports, and, I may safely add, to the energy of my predecessors in office, Surgeon Dymott and the late Surgeon-Major McNally. Table II attached shows that increased activity has not been limited to any special branch of the department, but has been general, if the, in any case, small work falling to Cantonment vaccinators be excepted.

5. The total live-births recorded in the Madras Presidency during the year were 864,115, whilst there were 176,463 successful vaccinations of children below one year of age, representing a vaccination rate within the first year of life of 20.4 per cent.

6. LOCAL FUND CIRCLES.—Marked increase of annual outturn has occurred in the following districts:—

In Kurnool, 4,026 cases in excess by the ordinary staff, and 17,582 cases by a special staff; in Trichinopoly 13,186, Vizagapatam 13,004, and Chingleput 7,947. An increase of 4,774 in Kistna is of special interest, with reference to the formerly-backward condition of the district; there is, however, still much room for improvement, as the number of successful primary vaccinations per annum amount to only 11·8 per mille of the population, affording, by a long way, the worst result in the Presidency. I have directed the special attention of the District Board of Kistna to the subject, and have received a reply from the Acting President, Mr. Wolfe-Murray, that every effort is being made to retrieve this condition of affairs, by inducing Revenue subordinates to personally aid vaccinators.

Only two cases of heavy decrease are recorded, namely, in Coimbatore and South Canara to the extent of 4,250 and 10,858 cases respectively. The decrease in Coimbatore is ascribed to the operation of a ruling that "excess cases" shall not be paid for, unless actually certified to by the Deputy Inspector, and consequent decline of incentive to operate upon more than the minimum number demanded; to the discovery of falsification of records by six vaccinators, and to labour lost during their suspension and prosecution; to difficulty in filling vacant posts, and the absence of effectual aid from village officials. No satisfactory reason for the falling off in South Canara has been advanced.

7. Classified according to ratio of successful primary vaccinations during the year to mille of population, the following districts show the best results:—Chingleput 45·3, Salem 36·4 and Trichinopoly and Bellary 33·3, each. The following Deputy Inspectors have shown increased outturns in their ranges worthy of special mention:—M. Ramasawmy Naidu of Trichinopoly circle, and K. Vurdarajulu Naidu of Saidapet circle.

8. The following Deputy Inspectors have inspected less than the minimum laid down, of fifty per cent. of the total vaccinated within their ranges:—Ramanah Naidu, Gooty range; Baliah Naidu, Chingleput range; Babu Naidu, Sidhout range; Puttabyah, Pittapur range; Rangasawmy Naidu, Permagudi range; and the Deputy Inspector of Vizianagrum range.

9. Each case will be dealt with on its merits, and where no satisfactory reason is offered their punishment will be recommended. In the case of the Deputy Inspector of the Chingleput range, whose percentage of work is lowest of all, with the exception of the Deputy Inspector of Vizianagrum, in whose case special reasons existed, it is noticed that this is the second year that this has occurred, and that an unnecessary proportion of the man's time has been consumed in travelling to and fro to attend meetings of the Chingleput District and Taluk Boards and Conjeeveram Municipality, of each of which he is a member. It seems to me, in consideration of the peculiar duties demanded of Deputy Inspectors, that their being members of Local Bodies trammels their usefulness. So long as the District Sanitary Officer is a member of the District Board, his guidance as to professional matters with respect to vaccination should suffice, without the support to be derived from opinions of the nature likely to be held by a Deputy Inspector. Moreover it does not seem to be conducive to discipline, that a Deputy Inspector should be placed in a position in which he can vote as to the conduct of matters in a department where he holds but a subordinate position.

10. In certain districts the systematic working of the department is considerably hampered, by the necessity of either First-class Vaccinators or Deputy Inspectors being specially directed to give certificates of vaccination for grant-in-aid schools. If the proportion of Vaccinators and Deputy Inspectors to population and area of country has been properly calculated, it follows that the extra duty involved is likely to affect injuriously the working powers of the department. When, therefore, schools are numerous, it would seem desirable that arrangements should be made for temporarily strengthening the local staff, debiting the cost locally to the District Board grant for education. This might be arranged by the appointment of trained probationers as acting vaccinators, thus giving First-class Vaccinators for the work, or by the use of unattached Hospital Assistants. A decrease of possible outturn is also brought about, by the extraordinary practice of detaching

vaccinators for cholera duty pursued by certain District Boards. These men can by no manner of reasoning be regarded as possessed of either the medical or sanitary knowledge requisite for such employment, and hence both in the interests of the Vaccination Department and of the adoption of correct sanitary measures with respect to cholera, their utilization for this purpose should be definitely forbidden.

11. MUNICIPALITIES.—Under Municipalities, a total decrease of two cases, when compared with last year, is recorded. Nellore exhibits a decrease of 1,912 cases. The reason for this result will be ascertained at once by special inspection; information at present available points to the incompetency of the vaccinator employed, in spite of the District Medical and Sanitary Officer's protest. In Kurnool a decrease of 903 cases is shown, but the total record must nevertheless be regarded as good, as during the previous year, special efforts being made with reference to an epidemic of small-pox, 2,596 cases were returned against 639 of the year 1887-88.

12. Compulsory vaccination is in force in 25 of the total of 55 Mofussil Municipalities in the Presidency, showing an increase of 4 towns since last report, namely, Vaniyambadi, Kurnool, Kumbakonam and Tirupati. The change from option to compulsion has in all cases been received well, the people being fully alive to the benefits of a properly conducted system of this nature. In Municipalities, where compulsion is in force, the successful vaccination of infants under one year of age to registered births bore a ratio of 64·9 per cent. against 96·5 per cent. of 8 chief towns in Scotland. In Municipal towns, where option is permitted, the ratio was 39·7 per cent.

13. LOCAL FUND HOSPITALS AND DISPENSARIES.—Returns from institutions under the charge of District Medical and Sanitary Officers show an increase of 9,022 cases, when compared with the outturn of last year. This result must be considered very satisfactory, as Medical Subordinates have certain difficulties to contend against in carrying out vaccination duty, that are not experienced by members of the Vaccination Department. In Chingleput, the admirable advance in dispensary vaccination work made in 1883-89 during the administration of Surgeon Sarkies was continued and exceeded by his successor, Surgeon-Major Nailer; so that this year more than three times the number of cases have been returned, when compared with a period of two years back. An equally good result has been effected by Surgeon-Major Sturmer in the Vizagapatam district, a three times greater number of successful vaccinations having been performed than in the previous year; Kurnool, Godavari, Trichinopoly, North and South Arcot have each returned more than double the number of last year.

14. CANTONMENTS.—In the Cantonments of Bangalore and Secunderabad a decrease of 1,270 cases is reported. In Bangalore, the decrease would seem to a certain extent ascribable to the fact that the efforts of the vaccinators were, from the commencement of the calendar year, confined to the military services; for the most part, however, the decrease is but relative, owing to a large number of re-vaccinations having been carried out in the previous year, in consequence of the prevalence of small-pox. In Secunderabad the only reason offered by the officer in charge of the vaccination staff is that, in the absence of compulsion, difficulty is experienced in vaccinating children.

15. HILL TRACTS.—The returns from Ganjam show an increase of 9,149 operations. Gunapur has not yet returned to the position it occupied in 1887-88, but it did better this year than last by 847 cases; the remainder of a total increase of 1,236 cases represents the united efforts of Jeypore, Gudem, Bhadrachallam and Peddapur. The Hill Tracts have not kept step with the advance made by the rest of the Presidency; but it must be remembered that unusual difficulties present themselves in these parts of the country. For example, in Jeypore Hill Tracts the posts of two vaccinators were not filled during six and eleven months of the year. In reply to a query on the subject, I was informed that suitable men could not be induced to undertake the work of vaccinators on the small pay of Rs. 10 allowed by Government. Under G.O., No. 842, dated 9th April 1888, the Vaccination Department in this part of the country is practically independent of control of this office, but I venture to suggest, irrespective of the remarks made by me in a

supplement to this report with reference to the re-organization of the department, that rates of pay much above the average, should be allowed to men working in these tracts.

QUALITY OF WORK EFFECTED BY THE VARIOUS BRANCHES OF THE DEPARTMENT.

16. Nothing short of the laborious checking of the work of vaccinators as pursued during actual inspection, can testify accurately as to the value of the vaccination performed: so-called vaccination marks may be made which are of little or no value. Statements as to quality of work are forwarded to Government after special inspections of Municipalities and districts by the Sanitary Commissioner and his Deputy; but the percentage of successful operations to total performed is also a guide of some value as to the quality of lymph used and skill exhibited, when applied to statistics furnished with this report. This is shown in Table IX attached. As the number of Deputy Inspectors employed is not sufficient to verify the total cases per annum by vaccinators, a large percentage of cases have to be regarded as "successful" on the report of the operators. The average of success for Local Fund Circles, as reported by vaccinators, by all methods of vaccination, amounts to 95.7 per cent., whereas the average result after inspection by Deputy Inspectors amounts to 91.4 per cent. (including work of Municipal Vaccinators reported on by Deputy Inspectors), showing a difference of 4.3 per cent. between the two statements. It will be observed the result of inspections by the Deputy Inspectors does not show uniformly a smaller percentage than that stated by vaccinators, as might naturally be expected; but it is possible the explanation in these cases may be that the greater number of cases verified by these Deputy Inspectors, may have been in divisions where more skilful performance of the operation was effected than in others in the same range. In only one case do the rates exactly correspond. This average rate represents a degree of success by all modes of employment of lymph, namely, with lymph taken from arm to arm, stored in tubes, or between glasses and in bottles, and by the softening of scabs. It will be seen, as, indeed, should be the case, that in the majority of operations with human lymph the arm-to-arm method has been employed. According to a standard authority—Marson—an expert vaccinator ought not to fail in producing successful results more than once in one hundred and fifty cases; so that, irrespective of the deduction that should be made on account of the difference reported on inspection, the rate of success for this mode of vaccination even at 96.8 per cent. shown in Table X attached, cannot be said to bring the vaccinators employed by District Boards under the definition of experts. Where stored lymph is used, some latitude must be allowed, in consideration of climatic conditions to be contended against, when compared with European results. In Europe, it is expected that a vaccinator ought not to fail when employing this mode in more than 5 per cent. of his cases; the grade of 91.5 per cent. shown under the heading of stored lymph need not be regarded, therefore, as proving more than the imperfect skill exhibited in operating from arm to arm plus climatic conditions, with reference to the preservation of lymph. I trust, in calling attention to these points, I may not be mistaken. Vaccinators doubtless perform their duties to the best of their power; the fault, if fault there be, lies in the system which places uneducated men in the department.

17. The rate of success for all methods of primary vaccinations in the case of Municipalities is lower than that found under Local Fund Boards, namely, 93.5 per cent.—a rate uncorrected by inspection. Again, the rate for operations by Medical Subordinates attached to dispensaries and hospitals is still worse, being 86.9 per cent. This result, in the case of the latter, may be said conclusively to show that my argument as to better education of vaccinators securing better results is disproved, having regard to the medical training of these operators; but I believe that a Medical Subordinate is much more likely to be a correct judge of what is a "successful vesicle" than a District Board Vaccinator in the first place; and, in the second, the method necessarily pursued *courts* failure. It is impossible for Medical Subordinates to attend punctually, on account of other duties, for the taking of fresh lymph, and therefore they use very largely material in tubes supplied by

District Board Vaccinators. When it is possible to transmit animal lymph without deterioration, undoubtedly the superior skill of Medical Subordinates will be evident in their showing satisfactory ratios of success; under the present conditions, such results cannot be well looked for.

EXPENDITURE ON VACCINATION DURING 1889-90.

18. The total expenditure of the department was Rs. 1,85,194-9-7, of which Government contributed Rs. 7,122-11-7 on account of Government establishments and Cantonments, Municipalities Rs. 26,036-6-1, Local Fund Circles Rs. 1,51,455-11-5, and Native States Rs. 579-13-6. Although the total expenditure for the year is Rs. 4,238-6-4 in excess of last official year 1888-89, and Rs. 9,405-3-11 in excess of that of 1887-88, the cost of each successful vaccination has been reduced from Annas 3-11 in 1888-89 to Annas 3-8 in 1889-90.

ANIMAL VACCINATION.

19. This method was first introduced practically into this Presidency by Dr. Laing, now Sanitary Commissioner, in 1879. Since this period it has been adopted in district after district, till, at the present time, there are only six districts in which it is not practised. The methods employed vary; in some districts inoculated calves are sent out with the Deputy Inspectors throughout the year, and thus a fresh generation of lymph is placed at disposal of each vaccinator at the time of inspection of his division; in others, a calf is retained in a vaccinator's division for a certain number of months in the year, and is then passed on to others in the district.

20. In Kurnool, a staff—varying in number from month to month—was employed on my recommendation, as the then District Medical and Sanitary Officer, which undertook vaccination solely by animal lymph. Each vaccinator was supplied with a calf, and a total of 17,352* cases were performed at a total cost of Rs. 1,300-8-9, including all charges, except the pay of Hospital Assistants who did 1,175 cases. The experiment showed that if possessed of the large store of lymph available when using calves as vaccinifers, a fairly energetic man could perform 500 cases per month. A scheme was consequently placed before the District Board for abolishing the large staff necessary when employing humanized lymph, and for limiting them to one man per taluk, on the increased pay of Rs. 20 (against Rs. 10 and Rs. 15 formerly given) plus a fixed travelling allowance of Rs. 7-8-0. This scheme has been sanctioned by Government for the ensuing year. One of the most satisfactory features of the experiment is, that instead of the former ignorant class of men, those newly entertained have passed the Matriculation Test, with the exception of a Brahmin, who has passed the Middle School Examination. It remains to see how far this respectable class of men will be content to serve under the evil conditions of climate found at Kurnool, and it is on this account, somewhat unfortunate, that an experiment of so much importance should involve this possible element of failure. I may add that this scheme will not cost the District Board more than Rs. 1,090, over and above their usual allotment. This district is therefore the first in the Presidency to abolish *in toto* the use of humanized lymph. The readiness with which the necessity for this new order of things was grasped unanimously by the District Board of Kurnool does its administration great credit.

21. EXPENDITURE ON ANIMAL VACCINATION.—Necessarily the expenditure incurred on animal vaccination differs in various districts, as a result of the degree of facility with which animals can be hired or bought, and the varying modes of affording help to the vaccinators, or Deputy Inspectors in charge. Local authorities are doubtless best qualified to ascertain a fair price to be given for calves, but attention is required as to the variable charges made under contingencies; e.g., in one district it is thought necessary to hire eight men each time lymph is transferred, whilst elsewhere the Deputy Inspector manages to effect work with the aid of his peon, calf-watcher, and perhaps a village servant. These variations are to be expected in starting a new method, and will be rectified by this office in communication with the Presidents of District Boards. Table XI exhibits the total charges,

including pay of staff, as required in para. 6 of G.O., No. 827, dated 19th October 1889, Public; but in certain districts the Deputy Inspectors only vaccinate, and it would consequently give no result of value to compare their work on Rs. 60 a month, carried on in addition to their ordinary duties, with that of vaccinators on Rs. 10 and Rs. 15 per month, whose work is confined solely to vaccination. In such instances, the Deputy Inspector's pay has not been taken into account; but an equivalent has been found from the number of days' residence in the vaccinator's division in which the duty has been performed, as doubtless the operation in the majority of cases is carried out in reality by the vaccinator, under the Deputy Inspector's supervision. With one or two exceptions, it will be seen that the cost of each successful case by this method is very considerably below that by humanized lymph; thus a further reason is afforded, if any were required in addition to already recognized advantages, why animal vaccination should be adopted without delay throughout the Presidency. In arriving at the minimum probable cost of vaccination by animal lymph per case, some proportion of contingencies due to upkeep of the ordinary establishment ought in fairness to be debited, whereas in the returns received only expenditure on contingencies specially required for animal vaccination, are shown against it. The returns having been received exceedingly late, as formerly reported, it has been impossible to ask further information before proceeding to compile. In future, special forms and records will be arranged, by means of which it is hoped the desired information will be gained. With the staff organized, as in Kurnool, under better pay than elsewhere and performing animal vaccination only, the probable cost per case is—provided, as calculated, each man turns out 500 cases per month Rs. 0-2-7. As some difficulty occurred in getting suitable men on the pay offered at first, it is probable that the cost per case in this district may, in actual practice, be in excess. This figure is, however, I think, nearer the truth than those evolved from statistics gathered in districts where mixed systems are employed.

22. SUBSTITUTES FOR CALVES AS VACCINIFERS.—The direction of Government contained in G.O., No. 602, dated 12th July, 1889, that speedy abolition of the use of humanized lymph was desired, gave, during the year, a great impetus to the more general use of animal vaccination. The circulation of a pamphlet by Surgeon-Major Barclay, detailing the modes practised in Europe, also aided in eliciting interest on this subject, in the case of Medical officers who had not had the opportunity of personally witnessing them. Apparently, as a result of the interest thus awakened, certain suggestions have been received from Medical officers. Thus, Surgeon-Major Wilkins drew attention to the mode of procuring lymph advised by a Dr. Briggs of London. It was supposed that by placing a drop of glycerine upon a vaccine vesicle, exosmosis of the lymph would occur, especially if this were aided by friction over the vesicle by a hard smooth substance, such as a glass rod. I subjected this mode to practical experiment. I found that the supposed increased size of the drop of glycerine was really due to a loss of viscosity and, perhaps, some absorption of moisture from the atmosphere, which glycerine readily takes up. It was found that without rupture of the vesicle of the vaccinator, no active lymph could be obtained. Indeed, as it has long been known that the vaccine virus exists in the form of micro-organisms, and that by filtration the liquid portion of the vaccine could be proved to be innocuous, it would seem an almost necessary deduction that the process of osmosis, even did it occur under the circumstances named, would not be favorable to the passage of the virus through the tegument of the vesicle.

23. A recommendation was made by Surgeon-Major O'Hara as to the employment of donkeys as vaccinifers. This animal is treated with scant courtesy by more than one race of mankind, and it seemed unlikely that natives would receive the suggested mode with favor. Brigade-Surgeon Fox of Trichinopoly, however, at the request of the Municipality, put the matter to the test of practice, and found, as he had supposed would be the case, that the vaccinifer was more likely to excite ridicule than to prove a factor in the advance of vaccination. It is, however, desirable that Local Bodies should remember that to use donkeys when calves can be obtained readily is to go beyond the suggestion offered to them, and cannot be advised; Surgeon-Major O'Hara's original communication was circulated with G.O., No. 232 L, dated 11th February 1890, and this notified merely a sphere of usefulness

when calves could not be obtained, and pointed to the feasibility of regenerating lymph that had been subjected to prolonged transmission from calf to calf.

24. Surgeon-Major Lancaster brought to notice that if an animal were required to take the place of the calf, it would be advisable to use the goat. He apparently made no experiments upon this subject himself, whilst all recorded evidence goes to show that this animal, if susceptible to vaccination at all, is very feebly so. I accordingly inoculated a goat; the resulting vesicles were exceedingly small, and the use of the lymph upon the human being was followed by no result. A Monsieur Hervieux, however, contends, for reasons that need not here be detailed, that the goat should be preferred to the bovine species. An account of his experiments has not yet been published, and I consider that these results may be safely awaited before any action be taken in this matter. In the meantime, having regard to Hindu modes of thought, it is well that the truth—gratefully recognized from different points of view by people of every race—that one of the most useful animals to man, viz., the cow, further proves its value in the capability of rendering the virus of a loathsome and fatal disease innocuous, should be widely acknowledged. Indeed, so far as investigations go, there is no animal which so effectually performs this function as the cow. For example, with reference to the suggested use of the donkey, there is reason to believe that the virus, instead of becoming modified, would in time become aggravated in intensity, owing to the tendency to reversion; thus, Warlomont declared, after a large number of experiments, that the soil afforded by the equine species is "detestable." But, for this very reason, the occasional "strengthening" of the lymph, by passing through the country pony, or, as suggested by Dr. O'Hara through the cheaper donkey, need by no means be regarded as otherwise than of advantage under the circumstances above referred to: but, direct transfer to the human subject need not be practised. It is well, however, with reference to facilities of supply, that local authorities should recognize that although the heifer makes the best vaccinifer, young male bulls may also be employed, and that buffaloes are susceptible. In the Punjab, the latter animal has been largely utilized.

EXPERIMENTS AS TO THE PRESERVATION AND TRANSPORT OF ANIMAL LYMPH.

25. When animal lymph has been transmitted to operators in the ordinary capillary tube, it has been found that the life of the vaccine virus is limited to a period varying from 24 hours to 10 days in exceptional instances, according to the heat of the weather and mode of transport. It has been suggested that the capillary tube conduces to a condition of coagulation which is inimical; but even where specially devised tubes have been employed, it has been shown that the stored material suffers in transport. Thus, as early as 1876, I attempted introduction of animal vaccination in Trichinopoly, with lymph received in these tubes from Dr. Warlomont of Brussels; although sent by the overland route, it arrived in an inactive condition. Under these circumstances, with reference to the proposed substitution of humanized by animal lymph throughout the Presidency, it is a foregone conclusion that unless complicated apparatus be employed for transmission, either calves must be sent with vaccinators whilst on their tours, or depôts would have to be established at such frequent intervals in districts, that the undertaking would prove most expensive. Under the former mode, a certain amount of lymph may be wasted whilst waiting for cases which might not be forthcoming; in the latter, the expenditure required is found to be very heavy. Were a simple method of preservation of the lymph available, all difficulties would be effectually overcome; all the advantages of the animal lymph would be secured, whilst the monetary value of each calf employed would be reaped to its full. In connection with this subject, Government having kindly made a small money grant for the purpose, I have, with the aid of Deputy Inspector Subroya Chetty (placed at my disposal by the Health Officer of Madras), during the last four months, performed a very large number of experiments. I necessarily first employed the methods of preservation recognized in European countries, but found these useless when subjected to the severe heat of a Madras hot season. I then attempted experiments with substances that whilst capable of restraining the action of germs of decomposi-

tion, are not sufficiently active to destroy specific germs possessed of a higher grade of vitality. Partial success followed; but, as might be anticipated, prolonged contact with these substances, in the end, impaired activity. Ultimately, however, I devised an exceedingly simple mode, which I think will do all that is required. By this method, the vaccine product has been retained in an efficient condition without the aid of any extraneous mechanism, or, after first preparation, the use of any material, for forty days; whilst hawked about the town, for use during the hottest part of the last season's hot weather. The same material has also stood well the test of transport by rail and road for long distances. Certain details, as to its application to the ordinary exigencies of district work, however, remain to be worked out, and I shall then forward a complete report to Government. In the meantime, I am justified in stating that experiments have secured satisfactory results as to the main point at issue, and that a very large proportion of expenditure that would have been otherwise inevitable in carrying out animal vaccination throughout the Presidency may be saved.

THE EXTENT TO WHICH THE ADULT POPULATION IS PROTECTED BY VACCINATION.

26. On inquiry, I elicited from Medical Officers of Jails information as to the condition of the populations under their charge as to vaccination and previous affection by small-pox. The total average gained by observation of a population of 4,310 prisoners, showed that 204.8 per mille were vaccinated, 205.1 were unprotected on admission, and that 593.04 bore marks of previous attacks of small-pox, and 2.5 had both vaccination and small-pox marks. This affords a rough idea of the state of protection of the adult population of the lower classes.

RE-VACCINATION.

27. There is a field for much improvement throughout the Presidency as regards re-vaccination; in no district did the rate amount to 1 per mille with the exception of Kurnool, which showed 6.4 per mille. European statistics clearly demonstrate that re-vaccination, after the age of ten, or at least the age of puberty, is essential for the protection of adult life, and it is shown that this further vaccination so confirms the influence of the primary vaccination that most authorities are agreed that a subsequent re-vaccination is not required. At present, a large proportion of the adult population are doubtless in a condition of protection from having suffered from small-pox; but as time advances, and the influence of vaccination upon the younger members of the population increases, the adults will, in the absence of re-vaccination, suffer more from small-pox than the young—a condition actually found to have occurred in England, where re-vaccination is not as yet compulsory. I have issued a circular on this subject to the Presidents of District Boards and to Municipal Chairmen, and trust that next year's returns will show better results in this respect.

SUGGESTIONS BY DISTRICT MEDICAL OFFICERS.

28. Before compiling this report, I addressed a circular letter to District Medical and Sanitary Officers, inviting them to offer suggestions as to any improvement they might think desirable in the working of the department. I specially asked them to state the arrangements existing in each district as to modes of reporting small-pox attacks. Abstracts of their answers are given in tabular form in statement No. XIII attached, from which it will be seen that it is desirable that some definite mode of communicating with District Sanitary Officers and the Vaccination Department be brought into force, and be rigidly adhered to. In my opinion, a statement of first attacks in any village should be sent at once to the District Sanitary Officer by the Tahsildar of each taluk concerned, who should advise the Local Fund authorities of the area as to sanitary duties, whilst another intimation should be sent to the vaccinator of the circle and the Medical Officer of the nearest hospital. At each first outbreak these separate notices should be despatched; subsequently, weekly statements would suffice to the District Sanitary Officers.

CONDUCT OF THE STAFF, &c.

29. During the year one Deputy Inspector was prosecuted, convicted and dismissed for receiving illegal gratification and falsifying his returns; another was suspended for repeated negligence of duty and afterwards permitted to resign. Fines to the extent of Rs. 58 were inflicted on Deputy Inspectors for remissness in their duties.

30. The service registers of the Deputy Inspectors were all verified.

W. G. KING, Surgeon-Major, M.B., C.M., D.P.H., &c.,
Acting Inspector of Vaccination and
Deputy Sanitary Commissioner,
Madras.

MADRAS,
18th July 1890.

NOTE.—In the statements attached to this report, further information in a tabular form for convenience of reference will be found on the following points:—

- I. Table showing the work done by different establishments.
- II. Table showing the average number of operations performed by each vaccinator during the year contrasted with 1887-88 and 1888-89 by different establishments.
- III. Table showing the cost of vaccination during the year 1889-90 compared with two previous years.
- IV. Table showing the proportion of males to females vaccinated during 1889-90 by purely Local Fund agents contrasted with two previous years.
- V. Table showing the work done by Government vaccinators during 1889-90 compared with two previous years.
- VI. Table showing the work done by Native State vaccinators during 1889-90 compared with two previous years.
- VII. Table showing the work done by Cantonment vaccinators during 1889-90 compared with two previous years.
- VIII. Table showing the work done in dispensaries during the year 1889-90 compared with two previous years.
- IX. Table showing the inspection work of Deputy Inspectors of Vaccination during 1889-90.
- X. Table showing the percentage of success of the result of vaccine operations performed by different establishments during 1889-90.
- XI. Table showing the results of animal vaccination in the districts in which it was conducted during 1889-90.
- XII. Table showing the extent in square miles and strength of staff of each vaccination range.
- XIII. Abstracts of reports from District Surgeons regarding methods to be adopted for improving vaccination, &c.

W. G. K.

I.

Table showing the Work done by the different establishments.

Establishments.	Total number of persons vaccinated in 1887-88.	Total successful of primary vaccinations in 1887-88.	Ages successfully vaccinated in 1887-88.			Total successful of re-vaccinations in 1887-88.
			Under one year.	Over one and under six years.	Above six years.	
Government	9,816	9,479	686	4,078	4,715	74
Local Funds	625,795	590,953	126,432	349,271	118,090	4,259
Native States	4,042	3,885	178	1,920	1,787	...
Municipalities	75,535	67,405	17,358	29,220	20,827	2,914
Cantonment	3,937	3,293	2,182	849	262	204
Civil dispensaries	14,174	11,506	1,961	7,195	2,350	214
Medical subordinates	5,181	1,630	38	119	1,473	676
Total	738,480	688,051	148,895	392,652	143,504	8,541
—	1888-89.		1888-89.		1888-89.	1888-89.
Government	17,104	16,210	1,241	6,079	8,890	18
Local Funds	676,293	643,761	125,572	371,283	146,906	4,944
Native States	2,270	2,160	163	1,460	537	...
Municipalities	85,572	77,189	32,564	32,846	11,770	3,199
Cantonment	4,972	3,912	2,404	1,508	...	444
Civil dispensaries	18,827	15,603	2,686	9,634	3,283	275
Medical subordinates	4,679	1,517	45	247	1,225	518
Total	809,417	760,343	164,675	423,057	172,611	9,399
—	1889-90.		1889-90.		1889-90.	1889-90.
Government	28,336	27,227	2,235	7,647	17,345	70
Local Funds	718,537	680,355	133,895	399,462	146,998	8,740
Native States	5,280	5,069	606	2,475	1,988	6
Municipalities	85,570	76,215	32,975	30,715	12,525	3,361
Cantonment	3,702	3,285	2,059	1,226	...	224
Civil dispensaries	27,849	23,363	4,646	13,675	5,042	577
Medical subordinates	6,444	1,793	52	134	1,607	1,214
Total	875,748	817,307	176,468	455,334	185,505	14,192

(iii) The following table shows the total successful vaccinations by all agencies and the percentage of successful cases including re-vaccination :—

Establishment.	Number of successful vaccinations.		Total of successful vaccinations.		Ratio per cent of successful cases.		Ratio per cent of total successful cases.	
	1914-15.		1915-16.		1914-15.		1915-16.	
	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Local Fund vaccinators ...	1,186,576	94,550	1,155,851	1,20,748	1,281,126	1,276,599	90.5	84.3
Government do. ...	17,892	891	14,283	1,249	18,783	15,532	90.5	87.0
Municipal do. ...	108,742	22,223	108,880	51,785	180,965	158,615	94.7	73.3
Cantonment do. ...	3,949	6,462	4,152	1,938	10,411	6,149	89.6	53.6
Dispensaries ...	1	15	96	33	16	129,000	750	98.0
Medical subordinates ...	127	4,985	1,464	8,519	5,102	9,983	32.9	65.0
Total ...	1,317,277	129,126	1,292,676	184,322	1,446,403	1,460,938	90.8	79.3

The percentage of total success both under primary and re-vaccinations when compared with that of the previous year showed a large decrease. The fall in the success rate in primary was general for all kinds of establishment and in re-vaccination the decrease was prominent under "Local Fund Vaccinators," "Government Vaccinators" and "Municipal Vaccinators." Although some enquiry was made about it, it was found difficult to satisfactorily account for the large fall in the percentage of success which was as much as 3.6. No doubt the success rate with the stored raw lymph—a new experiment—issued from the King Institute for a time was very low, namely 80.6 per cent, but this can only account for a small part of the decrease, considering that only 356,418 operations were done with this lymph. It was, however, found that the success rate with the usual preserved lymph issued about the same time was also very low.

It should be noted that as long as there are no legal powers to enforce vaccination, the vaccination staff is more or less at the mercy of the public and the vaccination has to be carried on, from door to door under the most unfavourable conditions which affect both the rate of success and the quality of the vesicles in successful vaccination.

One other factor which I venture to submit as a result of my inspections and close study, is that tangible improvement may be expected to result, both in quantity and quality, if the local officials (Municipal, Local Board and Revenue) recognize the importance of vaccination in preventing a fell disease and take a real interest in vaccination work.

Infantile vaccination.

When compared with the previous year the following districts show the largest increase:—Malabar (+8.0%), Ganjam (+6.5%) and Rāmād (+4.6%). The districts which show the largest decrease in this respect are Kurnool (—19.6%) and Gōdāvari (—9.1%).

Among Municipalities, Kodaikānal (+31.7%), Bimlipatam (+25.5%), Wala-japet (+24.6%) and Tiruvallur (+20.5%) show very large increase over the previous year in infantile vaccination; but Palni (—34.7%), Rajahmundry (—30.2%) and Cuddapah (—29.0%) show the greatest falls. The fall in Palni is due to the prevalence of plague and consequent evacuation of the town. The attention of the Chairmen, Municipal Councils, Rajahmundry and Cuddapah, has been drawn to the fall in infantile vaccination in their Municipalities.

(iv) The cost of the various vaccination staffs and the average cost of each successful case are exhibited in the subjoined statement:—

Establishment.	Total expenditure.		Average cost of each successful case.	
	1914-15.	1915-16.	1914-15.	1915-16.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Government establishment ...	8,216 5 7	8,716 13 10	0 7 0	0 9 0
Local fund do. ...	2,96,130 7 3	2,89,603 0 10	0 3 8	0 3 8
Municipal do. ...	40,574 3 5	42,918 12 10	0 4 11	0 4 4
Cantonments do. ...	3,144 14 5	3,171 0 2	0 4 10	0 8 3
Total ...	* 3,48,065 14 8	† 3,44,403 11 8	0 3 10	0 8 9

* Exclusive of the pay and allowances of the Inspectors of Vaccination and Deputy Sanitary Commissioners, Northern, Central and Southern Ranges.
† Exclusive of the pay and allowance of the Inspector of Vaccination and Deputy Sanitary Commissioners, Northern, Central and Southern Ranges.

There was a slight increase in the charges of Government, Municipal and Cantonment establishments; but there is a marked decrease in that of the Local Fund. The average cost of each successful case fell from As. 3-10 in 1914-15 to As. 3-9 in the year under report. It varied from As. 2-3 in the Malabar and Vizagapatam districts to As. 5-11 in the Chingleput district excluding the Nilgiris where it was As. 13-1 this year against As. 12-1 in 1914-15. The districts which show a cost much higher than the average are Chingleput (As. 5-11), Koraput (As. 5-6), Gōdāvari (As. 5-5), Cuddapah (As. 5-4), South Canara (As. 5) and the districts which show a cost much lower than the average are Malabar (As. 2-3), Vizagapatam (As. 2-3), Tinnevely (As. 2-5) and Salem (As. 2-9). The rate was above As. 7 in the Municipalities of Anantapur (As. 11-2), Karur (As. 10-1), Coonoor (As. 9-7), Chicacole (As. 9) and Pēddāpuram (As. 7-8). The lowest figure was reached by the Parlākimedi Municipality where it was only As. 1-6. The rate was As. 1-7 in Tuticorin municipality.

(v) Vaccination was compulsory in all municipalities except Pēddāpuram and Narasaraopet where it has since been introduced. The total number of operations performed in all the municipalities during the year is 199,389 against 149,874 in 1914-15, i.e., there is an increase of 49,515 in the number of operations. This increase is due to the constitution of five new municipalities during the year and also to the increased number of cases vaccinated in some of the older municipalities especially Madras. Madras (+ 35,009), Parlākimedi (+ 4,632) and Tuticorin (+ 4,431) showed the largest increases. The towns which showed marked decreases were Salem (— 952), Ellore (— 692), Palni (— 584), Ootacamund (— 529) and Calicut (— 526). The decrease in these municipalities is attributed to one or other of the following causes:—

(1) prevalence of plague, (2) absence of small-pox, and (3) less number of births.

(vi) The following table exhibits the comparative success obtained by the use of different kinds of lymph in primary vaccination:—

Number of cases excluding unknown.	Area.	Kind of lymph.	Whence obtained.	Percentage of success.
1,341,077	Local Fund ...	Lanoline lymph ...	Supplied by the King Institute of Preventive Medicine, Guindy.	87.2
...	Do. ...	Glycerine " ...	Do. ...	...
94,845	Municipalities ...	Lanoline " ...	Do. ...	92.8
19,419	Do. ...	Glycerine " ...	Do. ...	97.4

The percentage of success from lanoline lymph was 87.2 in 1915-16 against 90.5 in Local fund areas and 91.8 and 92.0 respectively in municipalities.

Glycerinated lymph also showed a decreased success rate of 97.4 against 97.9 in the previous year.

(vii) A large number of deaths from small-pox was recorded during the year, the figures being 21,463 against 26,623 in 1914-15. The proportion of population protected in the districts and municipalities during the year is shown in the annexed two diagrams.

(viii) Six Deputy Inspectors of Vaccination of Penukonda (49.7), Central Coimbatore (49.5), Malappuram (47.1), Palghat (45.3), Vizianagram (42.5) and Ganjam hill tracts (36.7) have failed to verify 50 per cent of cases vaccinated within their ranges. Their explanations for the shortage have been obtained and orders passed. With regard to Ganjam hill tracts it may be stated that an additional Deputy Inspector of Vaccination has since been sanctioned by Government.

(ix) Of the 85 Deputy Inspectors of Vaccination borne on the Provincial list, 79 are qualified or certificated Sanitary Inspectors; the remaining are either exempted men or those specially selected for these posts before the present rules came into force. The service registers of all the Deputy Inspectors of Vaccination have been verified in the Sanitary Commissioner's office.

5. I have much pleasure in stating that the head clerks and other members of my office staff did their work well.

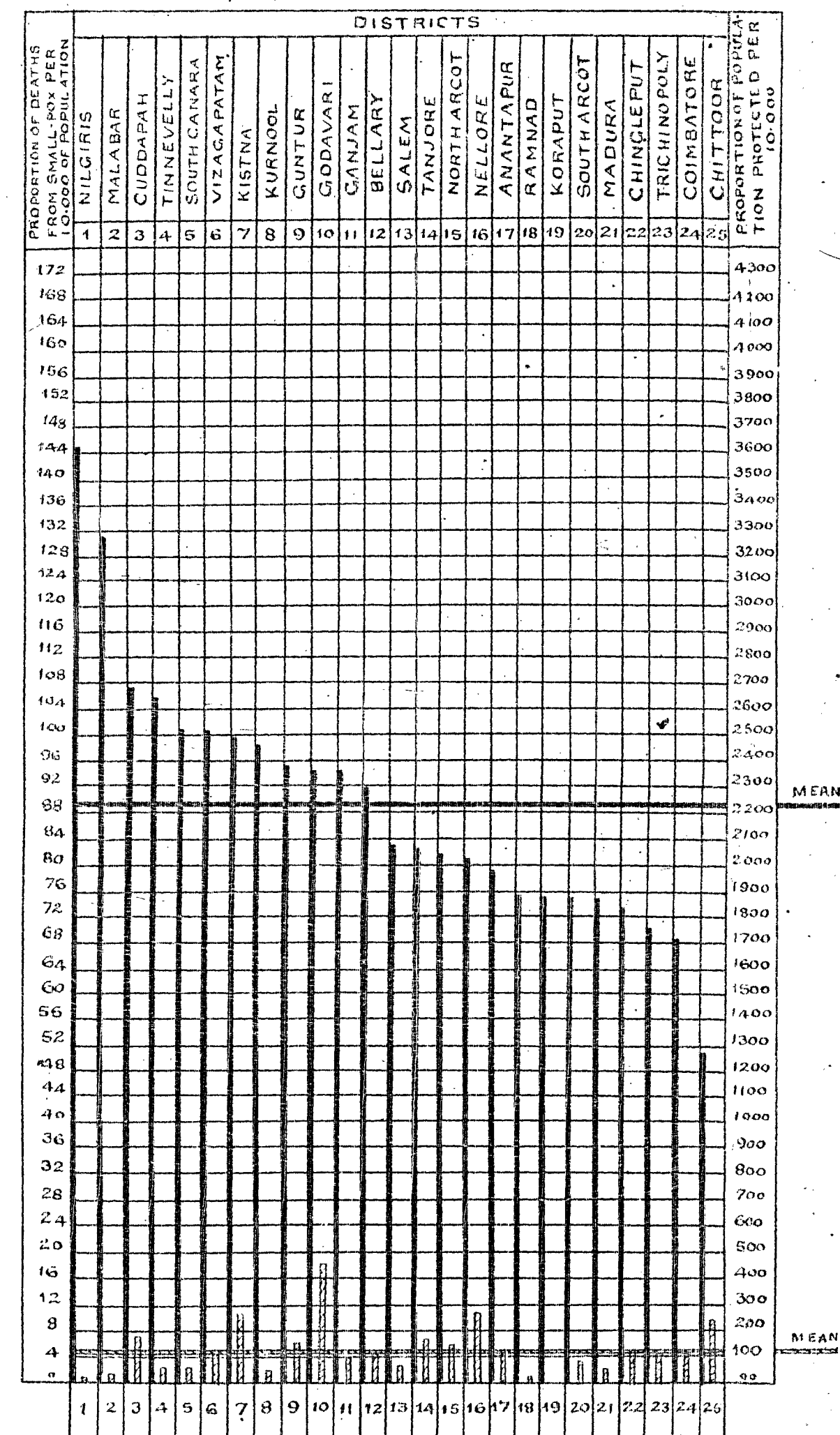
6. The little delay in the submission of this report is due to my having been absent on privilege leave from the 28th April to the end of June 1916.

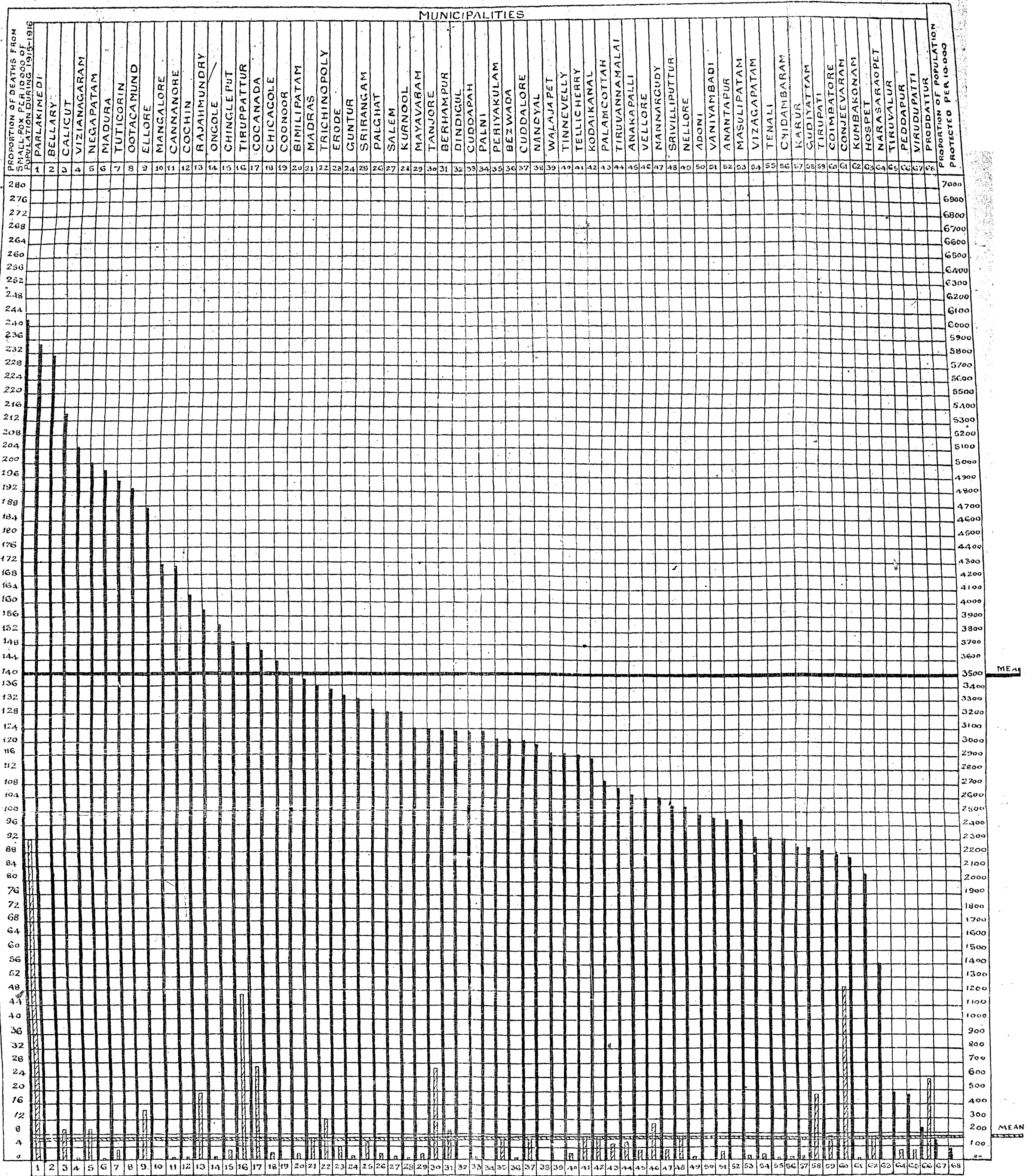
I have the honour to be,

Sir,

Your most obedient servant,

K. T. MATTHEW, D.H.Y., D.P.H. (CANTAB),
Deputy Sanitary Commissioner, Madras.





REFERENCE

THICK LINES REPRESENT THE PROPORTION OF POPULATION PER 10,000 PROTECTED FROM SMALL-POX

SHADED LINES REPRESENT THE PROPORTION OF DEATHS FROM SMALL-POX PER 10,000 OF POPULATION

ANNEXURE II.

VACCINATION STATEMENTS.

A—VACCINE

STATEMENT No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.	Population of districts or circles according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Total number of operations.	Primary Under 1 year.
						Males.	Females.	Total.			
1	2	3	4	5	6	7			8	9	10
1	Anantapur.	Anantapur circle	444,221	135	8	6,668	6,158	12,826	1,603	12,277	6,774
2		Penakonda do.	510,545	119	11	8,444	7,772	16,216	1,474	16,106	8,027
		Total of district	954,766	142	19	15,112	13,930	29,042	1,529	28,383	14,801
3	Bellary.	Bellary circle	885,164	156	10	7,403	7,530	14,933	1,494	16,020	10,472
4		Hospet do.	885,164	156	10	6,919	6,613	13,532	1,356	13,873	10,256
		Total of district	1,770,328	312	20	14,322	14,143	28,465	1,425	29,893	20,728
5	Chingleput.	Chingleput circle	1,340,518	436	4	8,311	8,136	16,447	4,112	17,162	7,098
6		Saidapet do.	1,340,518	436	4	8,910	8,115	17,025	4,256	15,306	5,497
7		Panneri do.	1,340,518	436	4	7,818	7,877	15,695	3,824	15,429	4,448
		Total of district	4,021,554	1,308	12	25,039	24,128	49,167	4,007	48,397	17,033
8	Chittoor.	Chittoor circle	528,016	194	10	8,745	7,561	16,306	1,831	16,041	7,136
9		Karvetnagar do.	694,025	234	14	12,103	11,266	23,369	1,669	22,779	9,208
		Total of district	1,222,041	428	24	20,848	18,827	39,675	1,653	38,820	16,344
10	Coimbatore.	North Coimbatore circle	489,392	165	9	9,999	9,323	19,322	2,147	19,157	5,986
11		East do.	554,719	233	8	11,709	11,288	22,997	2,875	22,182	6,883
12		South do.	387,884	211	7	6,641	6,548	13,189	1,884	12,952	4,798
13		Central do.	640,861	414	9	10,022	9,673	19,695	2,188	20,082	6,538
		Total of district	2,072,856	823	33	38,371	36,832	75,203	7,200	74,373	24,445
14	Cuddapah.	Cuddapah circle	303,660	137	8	5,916	5,149	11,065	1,383	11,870	4,535
15		Proddatur do.	267,072	198	7	4,652	4,225	8,877	1,268	9,792	4,712
16		Sidhout do.	305,439	131	8	5,945	4,971	10,917	1,385	11,131	4,382
		Total of district	876,171	466	23	16,514	14,345	30,859	1,342	32,793	13,629
17	Ganjam.	Berhampur circle	2,153,614	257	9	9,536	7,439	16,975	1,886	13,901	6,619
18		Chitacole do.	2,153,614	257	8	8,319	6,728	15,047	1,880	9,272	5,814
19		Ganjām Hill Tracts	2,153,614	257	14	6,658	5,960	12,618	898	12,134	2,617
20		Aaka circle	2,153,614	257	8	8,288	6,108	14,376	1,797	12,575	4,483
21		Parlalkimedi circle	2,153,614	257	8	6,900	6,518	13,413	1,676	9,816	4,107
22		Purushottapur circle	2,153,614	257	8	8,221	6,994	15,125	1,691	14,302	5,450
		Total of district	10,667,114	1,328	55	47,552	39,652	87,204	1,591	72,000	28,870
23	Godavari.	Cocanada circle	341,838	114	7	7,773	7,666	15,439	2,206	13,190	3,079
24		Rajahmundry do.	574,472	249	10	15,443	13,447	28,890	2,889	25,006	3,646
25		Polavaram do.	130,992	110	5	3,952	3,027	6,379	1,276	5,657	1,249
26		Poddappur do.	427,120	182	10	17,464	15,315	32,779	3,278	13,677	4,413
27		Bhadrachalam do.	75,910	110	5	2,090	1,714	3,804	763	4,024	1,152
		Total of district	1,550,332	645	37	46,131	41,169	87,300	7,032	60,044	13,539

* Excludes Sandur (18,526).

† Includes Hill Tracts.

DEPARTMENT.

Madras Presidency for the official year 1915-16.

Vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average number of persons successfully vaccinated during previous 5 years.		Average number of deaths from small-pox during previous 5 years.	
Successful.						Primary vaccination.	Re-vaccination.		Primary vaccination.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
1 and under 0 years.	Total of all ages.	Unknown.	Total number of operations.	Successful.	Unknown.									
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
4,844	11,735	25	741	553	1	65.8	74.7	27.7	0.2	0.1	...	...	...	...
6,020	14,611	35	650	550	18	50.9	80.8	29.4	0.2	0.2	...	...	...	...
10,861	26,346	80	1,391	1,103	17	93.0	80.3	28.7	0.2	1.2	27,543	28.8	573	0.6
4,121	15,159	25	143	138	...	94.8	90.5	34.3	0.2	...	...	...	...	...
2,883	13,734	14	314	311	...	99.1	90.0	...	0.1	...	...	...	...	...
7,004	28,893	39	457	449	...	90.8	98.2	34.3	0.1	...	28,540	32.2	125	0.1
3,303	11,095	2,004	264	123	39	73.6	52.6	...	12.2	11.4	...	...	...	...
2,625	9,196	3,162	1,219	554	250	72.7	57.2	...	20.0	20.5	...	...	...	...
5,367	9,950	625	208	208	143	73.6	43.2	...	12.4	22.9	...	...	...	...
11,195	30,241	7,174	2,108	885	423	73.3	52.5	23.2	14.8	20.1	34,831	25.9	481	0.3
6,472	14,101	493	999	529	201	50.7	66.3	27.8	3.1	20.1	...	...	...	...
10,939	20,827	753	1,089	728	131	94.6	77.6	31.1	3.3	12.3	...	...	...	...
17,411	34,928	1,246	2,068	1,257	332	92.9	72.4	29.6	3.2	16.1	30,101	24.0	662	0.5
5,896	12,697	969	1,076	445	79	66.5	44.6	25.6	5.1	7.3	...	...	...	...
5,777	12,377	1,831	1,542	553	143	63.3	39.5	24.2	8.3	9.3	...	...	...	...
5,553	10,534	435	403	303	53	84.1	73.9	29.5	3.3	11.5	...	...	...	...
6,488	13,610	1,328	224	103	19	72.8	50.2	21.5	6.6	8.5	...	...	...	...
23,719	49,144	4,553	3,305	1,404	294	70.4	46.6	24.6	1.3	8.9	50,417	24.6	1,726	0.3
3,704	8,676	371	561	339	18	75.5	62.4	29.7	3.1	3.2	...	...	...	...
3,782	8,903	172	262	212	11	92.5	84.5	34.1	1.7	4.2	...	...	...	...
4,426	9,484	469	713	621	25	88.9	90.7	33.1	4.0	3.5	...	...	...	...
11,912	27,063	1,012	1,538	1,175	54	85.2	79.3	32.2	3.1	3.5	33,001	37.7	557	0.6
4,095	11,449	578	3,774	2,065	303	85.1	83.4	...	4.1	8.0	...	...	...	...
2,462	8,166	379	5,927	4,963	462	91.8	90.8	...	4.1	7.8	...	...	...	...
5,919	10,622	500	1,205	1,027	65	91.3	90.0	...	4.1	5.3	...	...	...	...
5,016	10,258	737	2,493	1,788	229	87.6	83.4	...	5.3	3.6	...	...	...	...
3,193	7,327	432	8,753	2,666	367	85.0	83.3	...	4.9	2.7	...	...	...	...
5,742	11,520	623	1,259	1,032	75	85.4	91.5	...	4.4	5.2	...	...	...	...
16,767	60,222	3,369	18,220	14,320	1,501	87.7	83.6	34.8	4.6	8.2	71,759	33.3	623	0.2
4,978	8,488	810	2,757	2,035	747	74.0	69.2	...	6.6	10.3	...	...	...	...
10,344	16,751	2,305	5,168	2,327	1,373	71.8	69.4	...	9.1	25.2	...	...	...	...
2,162	3,310	578	1,253	661	184	73.7	52.4	...	6.6	14.0	...	...	...	...
3,553	8,265	1,302	20,583	10,895	2,498	65.4	60.2	...	8.9	12.1	...	...	...	...
999	2,257	348	673	169	31	61.6	26.8	...	8.6	12.0	...	...	...	...
22,535	39,054	5,042	31,650	18,097	4,883	70.2	60.6	35.5	8.3	15.4	52,197	33.6	707	0.4

P

A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.	Population of districts or circles according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Primary	
						Males.	Females.	Total.		Total number of operations.	Under 1 year.
28	Guntur.	Guntur circle	1,625,541	283	9	10,087	9,705	20,292	2,206	18,926	8,971
29		Narasaraopet circle			10	12,208	9,971	22,177	2,218	19,939	7,106
30		Bapatla do.			11	9,797	9,627	18,814	1,710	18,812	7,868
		Total of district	1,625,541	283	31	32,680	28,708	61,398	2,046	56,777	23,445
31	Kistna.	Ellore circle	1,884,728	319	15	14,082	13,414	27,496	1,833	27,214	8,346
32		Masulipatam circle			14	12,216	11,082	23,338	1,665	22,967	8,043
33		Narasapur do.			13	14,301	12,442	27,148	2,083	23,974	6,889
		Total of district	1,884,728	319	42	40,680	37,638	77,947	1,856	74,183	22,778
34	Kurnool.	Cumbum circle	395,841	113	13	9,495	6,283	15,878	1,221	12,948	1,843
35		Kurnool do.	497,085	113	18	9,538	7,647	16,805	1,200	15,219	9,175
		Total of district	892,926	118	28	19,753	14,030	32,783	1,261	28,294	10,863
36	Madura.	Dindigul circle	1,738,818	354	4	11,453	11,061	22,514	5,628	22,606	11,253
37		Madura do.			4	10,075	8,585	18,660	4,665	17,709	6,400
38		Usilampatti do.			5	9,504	9,005	18,509	3,702	16,235	8,371
		Total of district	1,738,818	354	13	31,032	28,651	59,683	4,501	59,685	25,010
39	Malabar.	Tellicherry circle	2,809,117	485	11	15,423	13,229	28,652	2,605	27,305	8,528
40		Calicut do.			9	14,524	14,910	29,143	3,271	27,117	6,018
41		Palghat do.			12	25,532	24,308	49,840	4,153	49,825	21,627
42		Malappuram do.			11	28,246	28,526	56,772	5,161	55,755	15,761
		Total of district	2,809,117	485	43	83,725	80,982	164,707	3,880	160,095	52,724
43	Nellore.	Kavali circle	1,294,906	162	8	7,607	6,645	14,252	1,781	13,773	3,706
44		Gudur do.			9	9,228	8,015	17,243	1,916	13,022	4,794
45		Kanigiri do.			10	9,602	8,383	17,985	1,798	17,143	3,830
		Total of district	1,294,906	162	27	26,437	23,043	49,480	1,833	45,938	12,330
46	Nilgiris.	Nilgiri circle	89,856	89	3	2,332	2,044	4,376	1,459	4,283	1,700
		Total of district	89,856	89	3	2,332	2,044	4,376	1,459	4,283	1,700
47	North Arcot.	Vellore circle	1,825,742	371	3	6,983	6,521	13,451	4,485	14,390	8,061
48		Ranipettai do.			3	7,420	6,863	14,283	3,761	11,842	6,311
49		Polar do.			3	6,911	6,218	12,129	4,043	13,759	5,882
50		Tirupattur do.			12	10,548	10,044	20,592	1,718	20,901	7,737
		Total of district	1,825,742	371	21	30,812	29,646	60,458	2,879	58,862	27,521
51	Ramanad.	Srivilliputtur circle	1,629,387	337	9	9,787	8,941	18,728	2,081	18,819	8,771
52		Ramanad circle (old Paramagundi).			10	9,900	8,570	18,670	1,867	18,340	8,704
53		Tirupattur circle			12	9,803	9,102	18,965	1,580	18,816	8,164
		Total of district	1,629,387	337	31	29,490	26,613	56,303	1,815	56,005	25,639

* Excludes Barganapalle (89,344).

† Excludes Laccadives (10,600).

DEPARTMENT.

Madras Presidency for the official year 1915-16—continued.

vaccination.		Re-vaccination.				Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average number of persons successfully vaccinated during previous 5 years.		Average number of deaths from small-pox during previous 5 years.	
Successful.														
1 and under 6 years.	Total of all ages.	Unknown.	Total number of operations.	Successful.	Unknown.	Primary vaccination.	Re-vaccination.		Primary vaccination.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
7,265	16,742	528	1,941	1,509	90	90.9	86.3	34.2	2.7	5.3	...	...	...	...
8,973	18,792	349	3,912	3,442	68	89.5	83.9		1.8	1.7	...	...	...	...
7,953	16,659	403	644	519	11	90.1	86.7		2.1	1.7	...	...	...	...
24,191	50,190	1,281	6,427	5,500	179	90.3	88.0	31.2	2.2	2.7	54,425	33.4	903	0.5
18,090	24,125	483	1,773	885	89	90.5	82.5	36.0	1.7	5.0	...	...	...	...
10,512	20,013	551	1,349	1,200	24	89.3	91.0		2.3	1.7	...	...	...	...
12,180	20,505	630	4,851	2,835	340	87.8	72.0		2.6	7.9	...	...	...	...
35,782	61,678	1,670	7,473	4,976	459	89.1	70.9	36.0	2.2	6.1	67,500	35.6	902	0.5
10,191	12,368	95	4,569	3,282	98	95.8	94.6	39.4	0.7	2.7	...	...	...	...
5,405	14,827	116	1,760	1,594	31	97.4	92.0	38.0	0.8	1.8	...	...	...	...
15,526	27,135	211	5,332	4,873	129	98.6	98.7	85.8	0.7	2.4	31,580	35.4	875	0.9
3,991	15,877	2,022	1,169	879	114	76.8	35.9	23.6	18.9	9.8	...	...	...	...
5,101	10,942	2,351	1,617	480	320	73.4	37.0		16.0	19.8	...	...	...	...
1,639	13,250	3,493	125	37	74	84.2	72.5		18.2	59.2	...	...	...	...
13,734	40,060	8,370	2,910	896	608	78.1	37.3	23.6	11.0	17.5	38,008	21.9	901	0.5
11,567	23,540	531	1,917	793	14	37.9	59.5	49.4	1.9	1.9	...	...	...	...
11,819	23,185	579	2,409	1,085	14	87.2	45.1		2.1	1.8	...	...	...	...
15,820	39,642	2,651	626	309	56	84.0	65.6		5.4	10.5	...	...	...	...
25,386	49,056	1,420	1,286	926	103	99.3	78.3		2.6	8.0	...	...	...	...
61,542	135,394	5,175	5,628	3,121	216	84.6	58.5	49.4	3.6	6.9	162,976	47.3	755	0.2
5,394	9,972	800	1,775	1,012	135	77.2	62.2	31.8	6.2	7.5	...	...	...	...
5,513	11,274	423	4,835	4,122	279	89.5	90.1		3.2	5.7	...	...	...	...
8,523	13,293	835	2,822	1,565	335	81.4	62.9		4.8	11.8	...	...	...	...
19,410	34,529	2,123	9,135	6,710	749	82.5	77.2	31.8	4.8	7.6	37,143	28.6	879	0.6
2,263	4,182	14	174	146	10	97.9	89.0	48.2	0.3	5.7	...	...	...	...
2,263	4,182	14	174	146	10	97.9	89.0	48.2	0.3	5.7	4,758	52.9	19	0.2
2,890	11,039	1,137	230	119	33	83.3	60.4	27.6	7.9	11.8	...	...	...	...
5,243	11,690	1,058	743	125	99	84.8	18.4		7.3	13.8	...	...	...	...
4,065	9,589	1,745	160	61	53	79.9	59.8		12.7	36.3	...	...	...	...
9,811	18,000	1,375	128	46	23	92.2	38.3		6.6	21.1	...	...	...	...
22,009	50,318	5,315	1,231	351	218	85.9	33.7	27.6	8.3	17.3	51,151	28.2	1,083	0.5
7,801	17,569	431	323	289	25	96.5	90.3	32.8	2.3	7.7	...	...	...	...
9,803	17,503	317	351	266	47	97.1	94.1		1.7	13.4	...	...	...	...
8,696	18,259	172	268	241	17	97.9	90.0		0.9	6.3	...	...	...	...
26,363	53,371	920	942	796	89	90.9	93.3	32.8	1.6	9.4	50,933	31.3	814	0.4

A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.	Population of districts or circles according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of persons vaccinated by each vaccinator.	Primary	
						Males.	Females.	Total.		Total number of operations.	Under 1 year.
1	2	3	4	5	6	7			8	9	10
54	Salom.	Salom circle	500,311	262	6	8,195	8,885	16,594	2,764	17,832	8,374
55		Sankari do.	605,833	302	11	10,178	10,124	20,802	1,840	21,015	8,555
56		Hosur do.	601,383	213	8	8,894	8,567	17,431	2,182	17,232	10,021
		Total of district	1,707,527	256	25	27,271	27,576	54,847	2,171	56,519	27,250
57	South Arcot.	Cuddalore circle	491,072	737	4	7,409	7,351	14,751	3,688	14,912	8,108
58		Vridhachalam circle	481,882	303	6	6,951	6,650	13,604	2,237	14,222	5,874
59		Tirukkottai do.	408,559	501	6	7,419	6,938	14,352	2,457	15,402	4,689
60		Tindivanam do.	385,246	485	5	6,946	6,245	13,191	2,638	13,690	4,417
61		Villupuram do.	507,906	765	4	8,032	8,339	16,371	4,098	16,435	8,037
		Total of district	2,284,665	545	25	37,181	35,543	72,729	2,909	74,721	31,125
62	South Cauca.	Northern circle			8	7,513	7,294	14,807	1,531	15,007	4,798
63		Central do.	1,142,860	285	8	6,648	6,446	13,094	1,337	13,542	5,809
64		Southern do.			10	8,968	8,018	16,381	1,338	15,873	5,808
		Total of district	1,142,860	285	26	22,529	21,753	44,282	1,763	44,122	15,915
65	Tanjore.	Tanjore circle	410,870	417	6	6,811	5,958	12,769	2,128	12,276	3,239
66		Negapatam do.	536,502	791	9	8,706	7,940	16,646	1,850	15,666	5,655
67		Pattukkottai do.	503,520	407	10	9,981	9,278	19,254	1,925	18,742	5,488
68		Kumbakonam do.	618,122	973	10	9,952	8,457	17,509	1,751	17,311	4,524
		Total of district	2,129,014	578	35	31,550	31,628	63,178	5,891	64,025	18,906
69	Tinnevely.	Shermadevi circle			8	11,042	9,959	20,992	2,024	21,154	10,590
70		Sivakuntam do.	1,680,720	381	9	13,360	11,705	25,065	2,785	24,800	10,951
71		Koilpatti do.			8	10,774	9,488	20,262	2,538	20,634	9,375
		Total of district	1,680,720	381	25	35,176	31,143	66,319	2,053	67,124	30,916
72	Trichi-nopoly.	Trichinopoly circle			12	11,856	11,721	23,577	1,965	23,679	9,307
73		Ariyalur do.	1,941,044	393	8	8,083	7,891	15,974	1,997	16,265	5,765
74		Namakal do.			9	9,852	9,225	19,377	2,153	19,804	7,932
		Total of district	1,941,044	393	29	29,791	29,137	58,928	2,083	60,235	22,104
75	Vizagapatam.	Vizagapatam circle			14	22,946	25,625	48,571	3,469	27,860	8,691
76		Government vaccinators (Gudem hills)	2,129,523		2	924	745	1,639	834	1,573	210
77		Vizianagaram circle			15	21,091	22,791	43,882	2,925	25,899	6,598
		Pārvatipuram do.			13	13,810	12,287	26,047	2,004	19,221	5,751
		Total of district	2,129,523		44	58,771	61,398	120,169	2,731	74,936	21,060
78	Kora-pat.	Gnanapur circle			9	5,708	5,122	10,830	1,203	8,636	1,624
79		Jeypore do.	949,390		10	8,886	8,454	17,340	1,784	16,631	3,112
80		Koraput do.			7	5,355	5,024	10,380	1,483	9,635	1,594
		Total of district	949,390		26	19,950	18,600	38,550	1,488	35,992	6,330
		Total of circles and districts	38,771,253	231	694	765,241	730,639	1,515,930	2,184	1,409,434	523,938

* Excludes Aminidivi islands (3,955).

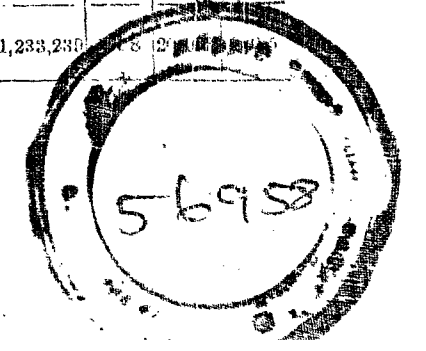
† Excludes Pudukkottai (411,886).

‡ Includes Hill Tracts.

DEPARTMENT.

Madras Presidency for the official year 1915-16—continued.

vaccination.			Re-vaccination.				Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous 5 years.		Average annual number of deaths from small-pox during previous 5 years.	
Successful.		Unknown.	Total number of operations.	Successful.	Unknown.	Primary vaccination.	Re-vaccination.	Primary vaccination.		Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.	
1 and under 6 years.	Total of all ages.														
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
7,093 10,520 5,757	15,834 20,176 16,127	438 236 298	22 23 956	16 21 799	3 91 63	93.6 93.1 94.0	93.6 94.8 86.6	31.7 33.5 28.1	2.5 1.1 1.7	13.6 6.4					
23,370	52,187	972	1,104	906	66	93.8	87.3	31.1	1.7	5.9	59,278	34.7	3,112	1.8	
2,103 5,433 6,464 5,635 3,130	10,315 11,808 11,781 10,411 11,322	8,010 970 1,478 1,128 1,655	1,150 405 314 229 1,807	632 213 226 80 798	284 50 55 76 181	86.7 89.1 84.3 82.9 76.6	79.9 65.5 87.3 53.3 70.9	22.2 24.9 29.6 26.5 23.9	20.2 6.8 9.6 8.2 10.1	24.7 19.8 17.5 34.5 13.8					
22,735	55,637	8,241	3,405	2,069	679	83.7	73.7	25.2	11.0	19.9	60,014	26.3	1,230	0.5	
7,055 5,463 6,799	12,943 11,758 13,112	590 263 325	601 693 881	386 482 635	34 38 34	89.1 88.5 86.3	68.1 86.6 74.9	25.9	3.9 1.9 2.1	5.7 0.3 3.9					
12,347	38,113	1,181	2,083	1,503	106	88.1	75.8	25.9	2.7	7.1	40,195	35.2	593	0.5	
7,908 8,193 10,352 9,827	11,653 15,227 17,933 15,878	75 178 161 895	568 1,683 816 1,074	541 1,581 713 925	8 70 23 54	95.5 98.3 95.9 93.7	96.6 98.0 93.7 90.7	29.7 31.3 32.9 27.2	0.6 1.1 0.9 2.3	1.4 4.2 2.8 5.0					
30,280	60,596	809	4,141	3,799	155	95.9	95.1	30.2	1.3	3.7	61,079	28.7	1,277	0.5	
7,155 8,755 8,850	18,645 21,223 19,009	852 559 301	1,079 1,402 679	872 1,211 533	121 59 123	90.5 84.5 92.9	91.0 84.5 95.9	37.0	4.1 2.3 1.9	11.2 3.9 18.11					
24,780	58,877	1,832	3,250	2,615	303	90.2	77.1	37.0	2.7	11.6	61,089	36.3	256	0.1	
11,404 7,385 8,543	21,475 13,397 16,527	840 241 994	259 339 58	211 266 238	25 11 11	92.8 87.4 86.2	90.6 81.1 80.9	26.2	3.5 5.8 4.9	10.0 3.2 18.9					
27,232	51,399	2,775	656	515	48	89.4	84.7	26.2	4.6	7.3	49,201	25.3	780	0.4	
12,900 617	24,667 1,404	1,129 88	23,536 129	21,330 63	969 47	93.8 94.5	94.5 86.3	31.1	4.1 5.5	4.1 39.1					
13,163 8,709	21,618 17,387	1,827 633	19,058 7,276	16,053 6,295	1,319 327	89.9 92.7	90.6 90.5	31.1	7.9 3.5	7.9 4.4					
35,329	65,106	3,718	49,985	43,711	2,692	92.5	92.5	51.1	5.0	5.8	72,858	34.2	260	0.1	
5,263 9,358 5,459	8,983 14,809 8,690	193 774 287	1,334 971 745	1,111 667 577	88 25 59	95.0 93.3 92.9	89.1 70.5 84.1	30.8	2.0 4.6 2.9	6.5 2.5 7.9					
20,120	32,482	1,254	3,050	2,355	172	93.4	81.8	30.6	3.4	5.6	32,841	34.5			
564,600	1,170,134	68,357	168,026	121,997	14,281	87.3	79.4	53.3	4.8	8.5	1,233,236	38.2	2,000	0.8	



A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.	Population of districts or circles according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of cases vaccinated by each vaccinator.	Primary	
						Males.	Females.	Total.		Total number of operations.	Under 1 year.
1	2	3	4	5	6	7			8	9	10
1	Military Cantonnments.	Bangalore	100,834	7,447	2	481	124	605	302	156	81
2		Secunderabad	103,879	5,167	4	3,056	4,589	8,545	2,136	4,741	2,802
		Total of Cantonments ...	204,713	6,291	6	4,137	5,013	9,150	1,525	4,897	2,583
		Medical Subordinates ...	...	...	...	13,016	1,468	14,484	...	1,684	864
		Adoni	31,845	2,281	2	563	620	1,283	641	1,245	1,137
2	Municipalities.	Anantapur	8,457	940	1	205	221	326	326	265	146
3		Anakapalle	20,625	1,719	1	420	291	711	711	646	414
4		Bellary	34,956	6,091	3	2,103	1,167	3,270	1,090	2,559	2,278
5		Berhampur	31,156	5,244	1	1,192	709	1,901	1,901	1,042	771
6		Bezawada	32,867	5,976	2	810	721	1,531	765	1,113	890
7		Bimlipatam	9,314	179	1	242	351	593	593	382	236
8		Calicut	78,417	7,292	4	3,683	2,427	6,115	1,528	4,589	1,332
9		Channarayana	28,957	5,791	1	1,143	676	1,819	1,355	835	585
10		Chicacole	17,853	5,617	1	338	316	654	654	531	379
11		Municipalities.	Chidambaram	21,327	10,663	1	513	566	881	881	799
12	Chingoleput		11,626	9,301	1	721	806	1,527	1,027	1,023	333
13	Cochin		20,023	20,023	1	1,105	522	1,627	1,627	1,143	631
14	Cocanada		54,110	9,018	2	1,553	940	2,493	1,301	2,167	734
15	Coimbatore		47,067	11,060	3	1,453	1,055	2,508	830	2,195	1,204
16	Conjeevaram		53,864	18,466	2	1,056	803	1,859	1,024	1,931	1,454
17	Coonor		9,933	1,710	1	358	233	591	621	673	362
18	Cuddalore		56,574	4,251	2	1,404	1,174	2,578	1,289	2,281	1,689
19	Cuddapah		17,807	903	1	498	235	733	733	511	355
20	Dindigul		25,062	9,635	3	650	433	1,083	533	886	761
21	Municipalities.	Dharaparam	37,819	12,006	2	1,014	1,167	2,181	1,535	2,422	1,374
22		Elore	16,701	16,701	1	513	471	984	984	959	708
23		Erode	23,380	23,380	1	405	397	802	802	771	642
24		Gudiyattam	40,529	9,096	2	1,935	966	2,901	1,465	1,519	1,270
25		Guntur	17,671	5,644	1	527	366	893	893	780	636
26		Hospet	17,674	8,837	1	313	236	549	549	552	439
27		Kodalkūnal	2,906	528	1	95	84	179	179	152	121
28		Kumbakonam	64,617	14,628	3	1,201	978	2,179	726	2,046	1,519
29		Kurnool	26,040	5,308	1	713	541	1,254	1,254	1,187	842
30		Madras	518,660	19,209	10	42,947	20,880	63,827	4,353	20,262	15,498
31	Municipalities.	Madura	134,180	5,086	10	7,088	5,550	12,638	1,234	11,436	6,682
32		Mannārgudi	21,808	3,566	1	469	392	861	861	810	605
33		Mangalore	48,412	9,380	2	1,506	1,131	2,637	1,318	2,220	1,231
34		Masulipatam	42,123	2,113	2	962	613	1,605	802	1,414	694
35		Māvaram	27,121	9,040	1	702	550	1,252	1,252	1,089	794
36		Nandyal	16,230	3,607	1	508	375	883	883	778	493
37		Negapatam	60,168	11,638	3	2,374	1,600	4,048	1,548	4,215	2,322
38		Narasaraopet	8,743	4,371	1	336	200	536	536	347	115
39		Nellore	33,246	2,074	1	1,375	664	2,259	2,259	1,070	728
40		Ongole	13,286	3,321	1	387	418	805	705	597	355
41	Municipalities.	Ootacamund	18,829	1,345	2	662	455	1,117	538	717	563
42		Palamcottah	44,009	11,227	2	1,441	583	2,024	1,122	1,682	1,167
43		Palghat	44,319	4,185	2	1,201	1,021	2,222	1,110	2,169	1,450
44		Parlakimedi	18,379	13,812	1	3,133	2,618	5,751	5,751	477	423
45		Peddapur	15,436	1,029	1	296	306	702	702	481	159
46		Periyakulam	18,715	18,715	1	498	416	914	914	839	759
47		Palni	13,211	7,549	1	281	149	430	430	306	244
48		Proddatur	16,756	3,933	1	85	60	145	151	144	85
49		Rajahmundry	49,417	14,583	2	2,605	1,140	3,744	1,877	1,454	790

* Medical Vaccinators.

DEPARTMENT.

Madras Presidency for the official year 1915-16—continued.

vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous 5 years.		Average annual number of deaths from small-pox during previous 5 years.	
Successful.	Total of all ages.	Unknown.	Total number of operations.	Successful.	Unknown.	Primary vaccination.	Re-vaccination.		Primary vaccination.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
30	122	...	443	239	23	78.2	56.1	3.6	...	5.1	...	...	...	...
665	4,030	26	4,347	1,749	98	85.5	41.2	55.6	0.5	2.3	...	...	...	...
695	4,152	26	4,706	1,988	121	85.2	42.5	29.9	0.5	2.5	7,902	38.6	64	0.3
567	1,454	9	12,803	8,519	792	87.4	70.4	...	0.5	5.5	...	...	...	...
24	1,161	65	66	64	1	98.3	98.4	38.7	5.2	1.5	1,106	24.3	111	3.5
32	182	20	61	27	2	74.7	45.8	24.7	7.5	3.3	282	33.8	8	0.9
120	581	6	73	49	2	91.0	67.1	39.4	0.9	2.7	806	39.0	16	0.7
98	2,380	...	703	624	...	91.6	88.3	85.9	...	...	2,804	80.2	76	2.2
153	824	...	970	731	35	88.6	71.7	52.6	...	3.6	1,321	41.9	21	0.6
151	1,077	2	431	333	28	93.9	82.2	42.9	0.1	6.0	1,451	44.1	8	0.2
56	323	...	334	243	4	84.5	73.6	60.7	...	1.1	439	47.1	1	0.1
865	4,408	5	1,619	1,531	21	96.2	94.0	75.7	0.1	1.3	6,637	84.6	68	0.9
402	1,262	10	580	317	44	93.8	59.1	54.5	0.7	7.2	1,835	68.4	117	4.0
120	516	...	153	150	...	97.1	95.0	37.3	...	...	966	54.1	3	0.1
102	721	33	120	101	15	94.5	96.2	33.7	4.1	12.5	696	22.6	1	0.04
64	428	1	564	367	35	92.6	69.4	63.4	0.2	6.2	613	52.7	2	0.2
291	1,069	18	510	172	109	95.0	39.9	62.0	1.6	20.2	1,141	56.9	17	0.8
594	1,336	169	1,116	362	356	6.8	97.6	31.3	7.7	31.8	2,088	49.6	31	0.5
548	1,791	45	351	174	8	83.1	50.3	41.9	2.0	2.8	1,565	33.3	110	2.3
188	1,651	74	118	72	22	89.1	75.0	32.0	3.8	18.0	1,664	30.9	10	0.2
176	541	1	48	33	2	94.6	71.7	37.8	0.2	4.2	517	55.1	1	0.0
458	2,238	1	297	244	12	98.1	88.6	43.9	...	...	2,366	41.8	4	0.1
80	451	...	228	86	20	88.3	38.5	29.8	...	8.8	799	44.9	7	0.4
48	810	7	235	161	13	92.2	83.9	38.8	0.8	6.3	1,030	43.6	12	0.5
872	2,294	1	683	417	55	94.7	70.6	72.4	...	7.1	2,631	69.5	38	1.0
133	864	30	25	16	...	97.0	64.0	52.7	3.1	...	400	48.1	6	0.4
74	718	24	55	33	21	96.1	97.1	32.1	3.1	33.2	725	30.9	8	0.3
78	1,361	1	1,511	901	256	89.6	70.1	55.8	...	10.6	2,032	50.1	88	2.1
130	766	...	116	116	...	98.2	100.0	49.9	...	...	802	45.4	5	0.3
37	504	2	12	4	1	91.3	36.4	28.7	0.4	8.3	560	31.7	2	0.1
22	147	1	35	28	1	97.4	82.4	60.2	0.7	2.9	111	33.2	...	...
326	1,870	5	139	102	...	91.6	73.4	30.5	0.2	...	1,550	28.6	23	0.4
254	1,128	...	122	41	38	95.0	52.4	45.0	...	31.2	1,192	45.8	10	0.4
3,155	18,813	843	43,803	23,670	7,359	96.9	65.2	81.9	4.2	16.9	26,363	50.2	159	0.3
4,093	10,874	8	1,756	1,373	17	95.1	79.0	91.3	0.1	1.0	9,143	68.2	335	2.5
163	822	1	17	16	...	96.9	94.1	33.2	0.12	...	771	36.0	25	1.2
836	2,168	3	417	366	10	97.7	89.9	52.3	0.1	2.4	2,615	54.0	28	0.6
328	1,258	...	226	197	7	93.0	87.0	34.5	...	3.0	1,505	35.7	54	1.0
138	943	25	357	233	12	92.9	84.9	45.6	2.4	3.4	1,227	45.3	9	0.3
212	713	...	148	132	...	91.6	89.2	52.1	...	...	664	40.9	34	2.1
1,430	3,877	9	428	327	3	92.2	79.2	69.9	0.2	0.7	4,571	75.9	34	0.6
89	205	42	395	228	12	97.2	77.8	49.5	12.1	3.9	...	...	...	...
105	845	4	1,345	655	56	79.3	50.7	45.1	...	4.2	1,137	34.2	19	0.5
127	496	15	158	134	...	93.5	84.8	38.3	2.5	...	715	53.8	1	0.1
72	693	2	400	283	42	96.9	79.1	51.8	0.3	10.5	1,373	72.9	3	0.2
316	1,501	8	737	556	61	96.8	86.7	46.5	0.5	8.3	1,795	39.9	4	0.1
362	1,850	...	279	163	...	85.8	59.4	45.6	...	...	2,019	45.6	12	0.3
336	911	2	4,860	4,063	100	96.9	85.0	266.9	0.2	2.0	1,031	56.2	...	...
95	294	80	284	80	107	73.3	45.2	24.2	10.6	37.6	...	...	...	...
47	806	1	84	73	5	97.2	92.4	47.0	0.1	5.9	795	42.5	8	0.4
18	264	...	124	83	14	86.5	84.5	27.0	...	11.3	747	66.5	12	0.9
51	139	...	8	7	...	93.5	87.5	9.3	...	...	...	...	...	...
464	1,261	5	2,300	1,542	267	87.0	75.8	57.8	0.3	11.6	2,810	53.9	86	1.7

A—VACCINE

Statement No. I showing the Particulars of Vaccination in the

Number.	Districts.	Circles.	Population of districts or circles according to the census of 1911.	Average population per square mile.	Average number of vaccinators employed throughout the year.	Total number of persons vaccinated.			Average number of cases vaccinated by each vaccinator.	Primary	
						Males.	Females.	Total.		Total number of operations.	Under 1 year.
1	2	3	4	5	6	7			8	9	10
48	Municipalities—cont.	Salem	59,153	13,984	2	1,260	939	2,199	1,099	1,952	1,871
49		Srirangam	24,799	3,543	1	664	604	1,268	1,268	1,190	683
50		Srivilliputtar	29,086	20,761	1	546	543	1,089	1,089	1,105	884
51		Tanjore	60,341	805	3	2,894	1,504	4,398	1,466	2,074	1,567
52		Tellicherry	29,258	11,703	2	1,086	675	1,761	830	821	716
53		Tenali	18,195	6,993	1	358	406	764	764	828	541
54		Tinnevely	44,805	7,469	2	1,296	913	2,209	1,104	1,949	1,540
55		Trichinopoly	123,512	14,893	3	3,693	2,630	6,323	2,108	5,469	3,888
56		Tirupattar	10,470	4,183	2	344	265	609	304	544	498
57		Tirupati	16,701	5,010	1	364	284	648	648	510	436
58		Tiruvalur	21,000	2,100	1	343	270	613	613	643	357
59		Tiruvannamalai	21,244	1,931	1	476	411	887	887	905	700
60		Tuticoria	40,185	11,481	4	4,032	2,519	6,551	1,638	1,595	1,283
61		Vaniyambadi	20,406	5,830	1	470	415	885	885	876	513
62		Vellore	43,746	8,102	2	1,337	849	2,086	1,043	1,681	1,426
63		Vizagapatam	43,413	3,340	2	1,131	1,108	2,239	1,119	1,224	792
64		Vizianagaram	37,550	7,510	2	2,225	1,845	4,170	2,084	1,954	1,233
65	Virudupatti	21,355	...	1	194	128	322	322	303	210	
66	Walajapet	9,962	9,962	1	283	214	497	497	442	357	
Total of Municipalities.			2,701,886	7,169	126	120,152	75,259	195,411	1,551	116,071	80,657
Grand Total ...			*41,473,138	311	826	922,516	812,429	1,734,975	+2,083	1,532,086	608,312

* Excludes the population of the Cantonments of Bangalore and Secunderabad.
 † In finding out the average number of persons vaccinated, the total work of
 Note.—(1) Difference between number of operations and number of persons
 (2) This statement does not include the statistics of dispensary vaccination
 N.B.—In calculating the percentage of success shown in this statement and

SUMMARY OF STATEMENT No. I.

	Total number of persons vaccinated.		Total number of operations performed.		Percentage of successful cases in which the results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccinations per 1,000 of population.	Total cost of department.	Average cost of each successful case.
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One and under six years.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
By Special staff (statement No. I).	1,466,104	268,871	1,532,086	268,943	87.8	75.7	829	2,083	608,312	589,293	35.4	311,406 11 8	0 3 9
By Dispensary staff (statement No. III).	99	41	99	42	97.9	84.6	...	...	59	35	...	...	...
By other agencies, if any.	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	1,466,203	268,912	1,532,185	268,985	87.7	75.7	...	...	608,401	589,293	35.4	311,406 11 8	0 3 9

* Exclusive of the pay and allowances of the Inspector of Vaccination and Deputy Sanitary Commissioners, Northern, Central and Southern Ranges.

DEPARTMENT.

Madras Presidency for the official year 1915-16—continued

vaccination.			Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Percentage of unknown cases to total cases.		Average annual number of persons successfully vaccinated during previous 5 years.		Average annual number of deaths from small-pox during previous 5 years.	
Successful.														
1 and under 6 years.	Total of all ages.	Unknown.	Total number of operations.	Successful.	Unknown.	Primary vaccinations.	Re-vaccination.		Primary vaccination.	Re-vaccination.	Number.	Ratio per 1,000.	Number.	Ratio per 1,000.
11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
67	1,938	...	247	189	...	99.3	76.5	35.9	...	...	2,855	48.3	8	0.1
463	1,138	31	78	61	7	98.2	85.9	48.3	2.6	8.9	1,181	47.6	31	1.2
134	1,040	...	41	37	...	94.1	99.2	37.0	...	...	1,046	35.9	...	...
865	1,094	...	2,330	1,951	5	93.1	84.3	49.0	...	6.2	2,465	49.8	81	1.3
71	795	...	847	895	23	96.8	42.7	49.7	...	2.4	1,221	41.7	34	1.2
182	737	6	23	22	...	89.6	95.6	41.7	0.7	...	691	37.9	4	0.2
192	1,758	7	403	364	10	90.5	92.6	47.4	0.4	2.5	1,902	42.5	33	0.7
1,452	3,247	31	851	675	84	92.4	87.7	48.8	0.6	9.8	5,678	48.4	193	1.3
1	512	...	65	60	...	89.6	62.3	67.5	...	...	506	48.3	14	1.3
52	492	...	138	65	30	96.5	60.2	32.3	...	21.7	5.38	32.2	1	0.1
184	611	5	6	5	...	95.0	83.3	29.3	...	0.7	284	18.3	2	0.1
106	838	...	48	43	2	92.6	83.5	41.5	...	4.2	751	30.6	22	1.0
258	1,550	...	4,856	3,527	301	97.8	72.6	12.7	...	6.1	2,691	66.3	31	0.8
160	678	103	43	16	21	87.7	72.7	34.0	11.8	48.8	683	33.5	11	0.5
216	1,642	8	405	110	229	98.2	91.8	35.3	...	71.4	1,852	37.2	34	0.7
238	1,071	13	1,095	516	187	89.4	58.8	56.5	1.0	17.0	1,378	31.7	11	0.2
320	1,752	29	2,303	1,830	117	90.5	83.7	65.3	1.4	5.0	2,776	73.9	3	0.1
90	300	...	19	17	...	89.0	89.5	74.4	...	...	...	...	...	...
65	427	7	55	45	9	98.2	91.8	47.4	1.6	15.5	424	42.6	4	0.4
23,401	106,830	1,807	83,318	51,785	10,259	93.5	70.0	58.7	1.0	12.3	139,507	48.3	2,108	0.7
589,293	1,282,580	70,109	268,943	184,289	25,369	87.8	75.7	35.4	4.6	13.8	1,371,648	32.9	22,355	0.5

medical subordinates is excluded.
 vaccinated, equals 63,954 which represents secondary operations.
 which are omitted separately in statement No. III.
 statement No. III, unknown cases have not been taken into account.

A—VACCINE DEPARTMENT.

STATEMENT No. II showing the Cost of the Department in the Madras Presidency for the official year 1915-16.

Expenditure.															
Number.	Districts.	Circles.	Inspector of Vaccination and Deputy Sanitary Commissioner.	Deputy Inspectors.				Vaccinators.				Pecunia, etc.	Total pay of establishment.		
				Pay.	First grade.	Second grade.	Third grade.	Pay.	First class.	Second class.	Probationers.				
1	3		4	5	6	7	8	9	10	11	12	13	14	15	16
1	Arani.	Arani circle	...	...	...	...	1	450 0 0	3	2	3	1,450 17 6	1	85 0 0	2,004 16 9
2	Arani.	Pudukota do.	...	...	...	...	1	455 10 8	2	2	7	1,587 8 11	1	85 0 0	2,168 17 7
3		Total of district	...	...	...	...	2	905 10 8	5	4	10	3,037 4 5	2	170 0 0	4,152 16 1
4	Bellary.	Bellary circle	...	...	1	...	1	838 1 5	5	5	1	1,443 1 10	1	77 9 3	2,236 13 0
5	Bellary.	Hospol do.	...	...	...	...	1	480 0 0	4	7	...	1,821 2 8	1	80 11 6	2,381 14 3
6		Total of district	...	...	1	...	1	1,318 1 5	9	12	1	3,264 4 7	2	158 5 3	4,742 11 3
7	Chingleput.	Chingleput circle	...	...	1	...	1	720 0 0	...	4	...	1,895 1 11	1	84 0 0	2,690 1 11
8	Chingleput.	Solinger do.	...	...	...	...	...	920 7 8	...	4	...	1,227 4 10	1	89 0 4	2,276 12 10
9	Chingleput.	Ponneri do.	...	...	...	1	...	843 1 7	...	4	...	1,719 11 6	1	109 8 6	2,561 13 1
10		Total of district	...	...	1	2	...	2,483 9 3	...	12	...	4,852 2 3	3	372 0 4	7,637 15 10
11	Chittoor.	Chittoor circle	...	...	...	1	...	720 0 0	5	4	1	1,556 2 6	1	83 0 0	2,364 2 6
12	Chittoor.	Karvetanagar circle	...	...	...	1	...	480 0 0	6	6	2	1,726 1 7	1	87 0 0	2,553 1 7
13		Total of district	...	...	...	1	1	1,200 0 0	11	10	3	3,012 4 1	2	175 0 0	4,687 4 1
14	Coimbatore.	Nerari Coimbatore circle	...	...	...	1	...	637 6 9	3	5	1	1,486 11 7	1	96 0 0	2,229 2 4
15	Coimbatore.	East do.	...	...	...	...	...	840 0 0	1	7	2	1,678 14 2	1	100 0 0	2,508 14 2
16	Coimbatore.	South do.	...	...	...	...	1	470 8 8	2	3	2	1,122 11 11	1	93 6 0	1,742 12 2
17	Coimbatore.	Central do.	...	...	...	...	...	840 0 0	2	6	3	1,476 14 0	1	100 0 0	2,444 14 0
18		Total of district	...	...	2	1	1	2,807 15 0	8	20	6	6,721 8 6	4	384 0 0	8,913 3 8

14	Cuddapah.	Cuddapah circle	...	...	...	...	834 3 1	3	5	...	1,666 9 11	1	95 0 0	2,155 15 0
15	Cuddapah.	do do	...	...	...	...	478 0 0	2	5	...	1,016 1 4	1	95 0 0	1,583 1 4
16	Cuddapah.	Sidhout do	...	...	...	...	723 12 11	3	5	...	1,454 8 5	1	93 0 0	2,271 5 4
17	Ganjam.	Berhampur circle	...	...	...	...	466 14 11	3	5	1	1,513 9 0	1	102 0 0	6,056 3 8
18	Ganjam.	Chilcote do.	...	...	...	...	720 0 0	2	6	1	1,441 2 10	1	102 0 0	2,112 7 11
19	Ganjam.	Ganjam Hill tracts	...	...	...	...	747 13 5	4	8	2	2,018 3 7	1	113 6 1	2,874 7 1
20	Ganjam.	Aiska circle	...	...	...	...	608 5 8	2	4	2	1,219 0 11	1	103 0 0	1,949 6 7
21	Ganjam.	Parikimedi circle	...	...	...	...	851 6 8	1	5	2	1,697 2 3	1	102 0 0	2,265 2 3
22	Ganjam.	Purnashottapur do.	...	...	...	...	541 2 10	3	5	...	1,094 6 8	1	102 0 0	2,047 9 6
23	Ganjam.	Total of district	...	...	...	...	3,958 11 6	15	33	8	8,898 9 8	6	623 6 1	13,420 11 3
24	Goavari.	Goavari circle	...	...	...	...	577 0 0	3	3	1	1,265 9 9	1	102 0 0	1,845 0 0
25	Goavari.	Rajamundry do.	...	...	...	...	480 0 0	4	4	1	1,321 10 6	1	107 8 3	2,512 2 9
26	Goavari.	Pelavaram do.	...	...	...	...	755 14 3	2	3	...	1,060 9 1	1	114 0 0	1,930 7 4
27	Goavari.	Peddapur do.	...	...	...	...	463 3 7	4	6	...	2,007 1 3	1	103 0 0	2,546 15 9
28	Goavari.	Bhatruohalam do.	...	...	...	...	818 13 7	2	3	1	1,020 5 5	1	114 0 0	1,982 2 0
29	Goavari.	Total of district	...	...	...	...	3,004 15 5	15	19	3	7,388 4 0	5	534 3 2	10,917 6 7
30	Guntur.	Guntur circle	...	...	...	...	840 0 0	3	4	3	1,772 14 0	1	94 0 0	2,396 14 6
31	Guntur.	Narasaraopet circle	...	...	...	...	440 0 0	2	3	3	1,111 11 7	1	70 12 3	1,622 8 0
32	Guntur.	Bapatha circle	...	...	...	...	784 10 0	4	3	4	1,607 10 0	1	94 0 0	2,516 4 0
33	Guntur.	Total of district	...	...	...	...	2,064 10 0	9	10	12	4,452 4 1	3	238 12 5	6,445 10 6
34	Kistna.	Ellore circle	...	...	...	...	720 0 0	1	3	11	1,843 12 10	1	84 0 0	2,047 12 10
35	Kistna.	Marsulipatam circle	...	...	...	...	840 0 0	2	4	8	2,168 6 5	1	102 0 0	3,110 6 5
36	Kistna.	Narasapur do.	...	...	...	...	720 0 0	6	6	1	2,255 12 1	1	103 8 0	3,100 4 1
37	Kurnoel.	Gurubam circle	...	...	...	...	2,280 0 0	9	13	20	6,207 14 4	3	289 9 0	8,667 6 4
38	Kurnoel.	Kurnool do.	...	...	...	...	835 0 0	4	4	5	2,025 1 11	1	84 0 0	2,644 1 11
39	Kurnoel.	Total of district	...	...	...	...	1,413 3 1	8	8	10	3,833 0 2	2	106 0 0	5,420 2 4
40	Madura.	Dindigul circle	...	...	...	...	828 5 4	...	4	...	1,202 12 6	1	84 0 0	2,175 1 10
41	Madura.	Madura do.	...	...	...	...	720 0 0	...	4	...	1,359 9 10	1	80 0 0	2,115 9 10
42	Madura.	Usilampati do.	...	...	...	...	708 0 0	...	5	...	1,708 14 0	1	85 8 9	2,554 7 8
43	Madura.	Total of district	...	...	...	...	2,308 5 4	...	13	...	4,281 4 10	3	255 8 9	6,545 2 11
44	Madras Presidency.	...	1 8,495 15 0	...	...	...	...	...	...	...	...	...	...	8,495 15 0
45	Madras Presidency.	Total of district	1 8,495 15 0	...	...	...	...	...	...	...	...	...	...	8,495 15 0

A—VACCINE DEPARTMENT.

Statement No. II showing the Cost of the Department in the Madras Presidency for the official year 1915-16—continued.

Number.	Districts.	Circles.	Expenditure—cont.				Paid from				Total.	Number of all successful primary vaccination.	Average cost of each successful case.	
			Travelling allowance.	Contingencies.*	Total cost.*	Imperial funds.	Provincial funds.	Local funds.*	Municipal funds.					
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
1	Anantapur.	Anantapur circle	629 2 6	843 14 2	3,497 14 2	...	1,183 8 3	2,311 5 11	...	3,497 14 2	12,288	0 4 7		
2		Ponnkonda do.	458 10 3	1,152 15 6	3,786 11 4	...	981 6 5	2,805 4 11	...	3,786 11 4	15,161	0 4 0		
3		Total of district	1,087 12 9	2,995 13 8	7,283 25 6	...	2,164 14 8	5,116 10 10	...	7,283 9 6	27,449	0 4 3		
4	Bellary.	Bellary circle	1,110 4 0	562 11 4	4,031 12 8	...	1,402 4 2	2,639 7 10	...	4,031 12 8	15,247	0 4 3		
5		Hospet do.	301 4 6	673 2 6	3,296 6 3	...	1,032 12 0	2,263 10 3	...	3,296 6 3	11,045	0 3 9		
6		Total of district	1,411 8 6	1,175 14 7	7,328 2 4	...	2,434 16 2	4,892 17 3	...	7,328 2 4	26,292	0 4 0		
7	Chingleput.	Chingleput circle	501 9 6	623 8 11	3,824 4 4	...	1,454 15 0	2,369 5 4	...	3,824 4 4	11,218	0 5 5		
8		Salepet do.	902 0 0	484 12 1	3,675 8 11	...	1,515 4 0	2,130 4 11	...	3,675 8 11	9,736	0 6 0		
9		Ponnéri do.	726 4 5	615 12 7	4,033 14 1	...	1,739 6 4	2,294 7 9	...	4,033 14 1	10,168	0 6 4		
10	Chittoor.	Total of district	2,129 18 11	1,763 1 7	11,533 11 4	...	4,739 9 4	6,794 2 0	...	11,533 11 4	31,126	0 5 11		
11		Chittoor circle	985 11 10	669 8 7	3,662 6 11	...	1,420 12 5	2,241 10 6	...	3,662 6 11	14,670	0 4 1		
12		Karvetnagar circle	1,013 6 3	712 10 4	4,249 2 2	...	1,027 5 7	3,221 12 7	...	4,249 2 2	21,555	0 3 2		
13	Coimbatore.	Total of district	2,002 2 1	1,522 2 11	8,211 9 1	...	2,448 2 0	5,763 7 1	...	8,211 9 1	33,185	0 3 8		
14		North Coimbatore circle	517 0 2	894 10 3	3,650 12 10	...	1,414 9 9	2,236 3 1	...	3,650 12 10	12,532	0 4 8		
15		East do.	451 9 3	884 12 1	3,846 4 4	...	1,553 13 9	2,317 6 7	...	3,846 4 4	13,430	0 4 7		
16	Chittoor.	South do.	279 14 0	559 8 3	2,879 10 5	...	983 4 8	1,896 5 8	...	2,879 10 5	10,837	0 3 10		
17		Central do.	490 4 5	911 3 7	3,756 6 6	...	1,028 13 6	2,127 8 6	...	3,756 6 6	13,749	0 4 4		
18		Total of district	1,646 11 11	3,271 3 0	13,833 1 7	...	5,631 9 9	8,271 7 10	...	13,833 1 7	50,548	0 4 5		

Number.	Districts.	Circles.	Expenditure—cont.				Paid from				Total.	Number of all successful primary vaccination.	Average cost of each successful case.
			Travelling allowance.	Contingencies.*	Total cost.*	Imperial funds.	Provincial funds.	Local funds.*	Municipal funds.	Total.			
			RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.			
14	Cuddalore.	Cuddalore circle	650 1 2	497 1 0	3,351 15 2	...	1,333 12 1	2,018 3 1	...	3,351 15 2	9,015	0 5 11	
15		Proddatur do.	522 13 4	477 14 8	2,384 13 1	...	919 12 7	1,770 0 9	...	2,384 13 1	9,115	0 4 7	
16		Sivakasi do.	692 10 10	463 0 8	3,457 9 10	...	1,201 3 1	2,225 13 9	...	3,457 9 10	16,168	0 5 5	
		Total of district	1,874 9 4	1,438 0 4	9,193 13 4	...	3,454 11 9	5,914 1 7	...	9,193 13 4	28,288	0 5 4	
17	Madurai.	Madurai circle	337 0 9	540 1 6	2,983 9 8	...	1,024 6 1	1,955 2 7	...	2,983 9 8	13,415	0 3 4	
18		Chinnai do.	233 0 0	512 14 2	3,133 7 0	...	1,134 12 4	1,974 10 8	...	3,133 7 0	13,139	0 3 10	
19		Gangaiyil tracts	1,573 14 0	439 2 1	5,023 7 2	...	5,023 7 2	11,649 0 11	...	5,023 7 2	11,649	0 3 10	
20		Arakam circle	302 8 0	572 7 9	2,811 6 4	...	1,111 11 10	1,696 10 6	...	2,811 6 4	12,014	0 3 9	
21		Parakkudi circle	254 12 6	448 9 8	2,916 15 6	...	1,281 12 1	1,635 3 5	...	2,916 15 6	10,933	0 4 3	
22		Paruthottapur do.	288 8 6	621 11 3	2,957 8 3	...	1,031 0 2	1,923 8 1	...	2,957 8 3	12,992	0 3 8	
		Total of district	3,272 12 9	3,164 13 11	16,868 5 11	...	10,673 1 5	9,195 4 3	...	16,868 5 11	75,672	0 4 3	
23	Godavari.	Godavari circle	628 14 2	636 11 9	3,133 8 8	...	1,033 6 3	2,149 13 5	...	3,133 8 8	10,323	0 4 10	
24		Rajahmundry do.	301 2 7	623 2 9	4,326 8 1	...	981 1 3	2,345 6 10	...	4,326 8 1	18,051	0 3 9	
25		Polyavaram do.	1,573 14 0	439 2 1	5,023 7 2	...	5,023 7 2	11,649 0 11	...	5,023 7 2	11,649	0 3 10	
26		Pudupur do.	1,983 1 6	1,341 2 6	4,994 3 9	...	1,168 11 7	2,825 8 2	...	4,994 3 9	19,160	0 4 2	
27		Udachiaram do.	636 1 0	373 2 3	2,031 6 3	...	3,081 6 3	...	...	3,751 6 3	2,416	1 4 1	
		Total of district	4,204 9 9	3,458 4 1	18,560 4 5	...	7,497 1 9	11,653 2 8	...	18,560 4 5	73,151	0 5 5	
28	Guntur.	Guntur circle	636 3 3	736 3 2	2,769 4 11	...	1,391 7 9	2,347 13 2	...	2,769 4 11	19,251	0 3 3	
29		Narasimhaipoet circle	578 2 7	867 8 8	3,968 3 3	...	849 10 8	2,227 8 7	...	3,968 3 3	20,234	0 2 5	
30		Bapatla circle	659 10 11	515 1 1	3,434 0 0	...	1,128 12 6	2,305 3 6	...	3,434 0 0	17,295	0 3 5	
		Total of district	1,931 0 8	2,121 12 11	9,594 8 2	...	3,382 14 11	7,149 9 3	...	10,594 8 2	55,590	0 3 0	
31	Kistna.	Ellooru circle	1,354 8 2	853 4 2	4,865 9 2	...	1,900 4 0	3,895 5 2	...	4,865 9 2	23,010	0 3 1	
32		Machilipatnam circle	1,276 1 11	1,303 0 5	5,389 7 9	...	1,533 12 3	4,135 11 9	...	5,389 7 9	21,254	0 4 3	
33		Narasapur do.	1,273 4 11	876 5 11	6,257 14 11	...	1,569 12 6	3,686 2 5	...	6,257 14 11	25,890	0 3 7	
		Total of district	3,903 15 0	3,031 10 6	16,502 15 10	...	4,163 12 9	11,659 3 1	...	16,502 15 10	69,654	0 3 8	
34	Karnool.	Cumbham circle	504 2 2	750 5 0	4,207 9 1	...	1,679 0 9	2,628 8 4	...	4,207 9 1	15,530	0 4 4	
35		Kurool do.	292 6 8	855 4 11	3,593 13 0	...	1,217 13 9	2,375 15 3	...	3,593 13 0	16,421	0 3 6	
		Total of district	796 8 10	1,611 9 11	7,801 6 1	...	2,896 14 6	4,504 7 7	...	7,801 6 1	32,011	0 3 11	
36	Madura.	Madurai circle	816 1 8	851 4 1	3,842 7 7	...	1,481 4 5	2,361 3 2	...	3,842 7 7	18,556	0 3 9	
37		Madurai do.	922 14 3	758 12 7	3,867 4 8	...	1,329 6 2	2,537 14 6	...	3,867 4 8	11,452	0 5 5	
38		Uthampatti do.	852 4 8	681 14 5	4,221 12 4	...	1,341 10 11	2,889 1 5	...	4,221 12 4	13,287	0 5 1	
		Total of district	2,761 6 7	2,224 16 1	11,931 8 7	...	4,162 5 6	7,779 3 1	...	11,931 8 7	40,955	0 4 8	
...	Madras.	Madras Presidency	3,632 2 0	...	15,128 1 0	...	12,124 1 0	...	...	12,123 1 0	...	...	
		Total of district	3,632 2 0	...	14,193 1 0	...	12,126 1 0	...	...	12,129 1 0	...	...	

A—VACCINE DEPARTMENT.

STATEMENT No. II showing the Cost of the Department in the Madras Presidency for the official year 1915-16—continued.

Expenditure.																
Number.	Districts.	Circles.	Inspector of Vaccination and Deputy Sanitary Officer.	Deputy Inspectors.				Vaccinators.				Peons, etc.	Total pay of establishment.			
				Pay.	First grade.	Second grade.	Third grade.	Pay.	First class.	Second class.	Probationers.			Pay.	Number.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
39	Malabar.	Tellicherry circle ..	..	..	1	..	..	Rs. A. P.	2	3	..	1,838 5 0	1	Rs. A. P.	2,605 8 4	
40		Calicut do.	..	..	..	1	..	..	557 13 3	3	7	..	1,690 10 8	1	101 15 11	2,800 7 10
41		Palghat do.	..	..	..	..	..	..	586 10 8	3	3	..	1,893 13 3	1	102 0 0	2,478 9 11
42		Malappuram do. ...	..	..	..	..	1	..	480 0 0	3	8	..	1,632 15 0	1	93 3 6	2,112 2 6
		Total of district ..	..	..	1	3	..	2,449 10 7	11	33	..	6,041 14 8	4	105 3 4	9,486 12 7	
43	Nellore.	Kavadi circle ..	..	..	..	1	..	712 8 0	1	2	7 ⁶	1,413 0 1	1	84 0 0	2,209 8 1	
44		Gudur do.	..	..	1	..	..	588 6 2	6	2	..	1,736 0 9	1	84 0 0	2,457 6 11	
45		Kanigiri do.	..	..	..	..	1	..	612 2 3	1	4	5	1,745 11 7	1	84 0 0	2,441 13 10
		Total of district ..	..	..	..	1	1	1	1,918 0 5	8	8	15	4,943 12 5	3	223 0 0	7,108 12 10
46	Nilgiris.	Nilgiris circle ..	..	..	..	..	..	600 0 0	3	..	1	1,065 13 11	1	114 0 0	1,842 13 11	
47	North Arcot.	Total of district ..	..	..	..	..	1	650 0 0	3	..	1	1,068 13 11	1	114 0 0	1,842 13 11	
48		Vellore circle ..	..	..	..	1	..	..	415 0 0	3	..	..	660 8 0	1	102 0 0	1,251 3 0
49		Kanipattai do. ...	..	..	1	..	..	..	873 13 2	3	..	..	623 9 5	1	95 0 0	1,524 6 7
50		Polar do.	..	..	..	..	1	..	480 0 0	1	2	..	773 0 0	1	83 0 0	1,355 0 0
		Tirupattur do. ...	..	..	..	1	..	720 0 0	4	3	1	2,445 8 6	1	33 2 2	3,561 10 8	
		Total of district ..	..	..	1	1	2	2,553 13 2	11	10	1	4,523 4 11	4	336 2 2	7,492 4 3	
51	Kannad.	Savilpattur circle ..	..	..	1	..	..	750 0 0	3	3	1	1,482 4 3	1	96 0 0	2,328 4 3	
52		Benaul (old Paramagudi circle)	..	..	..	1	..	..	750 0 0	3	6	1	2,127 9 5	1	95 0 0	2,982 15 5
53		Tirupattur circle ..	..	..	..	1	..	..	720 0 0	3	9	1	1,778 6 7	1	36 0 0	2,595 6 7
		Total of district ..	..	..	..	3	..	..	2,220 6 0	9	20	3	5,388 14 3	3	253 0 0	7,906 4 3
54	Salem.	Salem circle ..	..	..	1	..	..	840 0 0	3	4	..	1,273 8 11	1	86 0 0	2,204 8 11	
55		Saakari do.	..	..	..	1	..	480 0 0	1	10	..	1,130 0 2	1	86 0 0	1,705 6 2	
56		Uttar do.	..	..	..	..	1	..	460 0 0	3	30	..	1,092 2 6	1	83 0 0	1,613 2 6
		Total of district ..	..	..	1	..	2	..	1,560 0 0	7	24	..	3,500 1 7	3	258 0 0	5,558 1 7

57	South Arcot.	Cuddalore circle ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..</
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* Includes two pupil vaccinators.

+ Excludes 7 temporary Vaccinators employed on Small-pox duty for different periods—1 for 5½ months, 1 for 6 months, 1 for 4 months, 1 for 3½ months, 1 for 3 months and 1 for 1 month.

A—VACCINE DEPARTMENT.

STATEMENT No. II showing the Cost of the Department in the Madras Presidency for the official year 1915-16—continued.

Number.	Districts.	Circles.	Expenditure—cont.				Paid from				Number of all successful primary vaccination.	Average cost of each successful case.
			Travelling allowance.	Coulingencies.*	Total cost.*	Imperial funds.	Provincial funds.	Local funds.*	Municipal funds.	Total.*		
			17	18	19	20	21	22	23	24	25	26
39	Madras.	Tollcherry circle	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
40	Madras.	Gallant do.	1,105 2 3	1,003 0 0	4,082 4 8	...	1,825 8 7	2,856 11 8	...	4,882 4 3	24,333 0 3	0 3 1
41	Madras.	Palghat do.	1,179 8 5	1,463 9 11	5,111 12 3	...	1,319 12 4	3,791 15 11	...	4,088 10 1	24,349 0 1	0 1 3
42	Madras.	Malayalam do.	1,170 11 0	1,887 18 10	5,179 11 4	...	1,200 9 0	3,919 2 4	...	5,111 12 3	39,951 0 1	0 1 7
43	Madras.	Total of district	4,456 3 8	5,420 5 8	19,382 5 11	...	5,738 5 10	13,544 0 1	...	19,382 5 11	138,515 0 2	0 2 3
44	Nellore.	Kavali circle	1,199 0 7	691 4 10	4,101 13 6	...	1,459 13 3	2,642 0 3	...	4,101 13 6	10,991 0 2	0 2 4
45	Nellore.	Gudur do.	684 1 6	642 15 6	3,784 7 10	...	1,058 0 11	2,726 6 17	...	3,784 7 10	15,395 0 3	0 3 11
46	Nellore.	Kangiri do.	708 0 4	592 14 10	3,862 13 0	...	1,139 9 9	2,073 3 3	...	3,803 13 0	14,819 0 4	0 4 6
47	Nellore.	Total of district	2,652 2 5	1,925 3 1	11,950 2 4	...	3,648 7 11	8,041 10 5	...	11,950 2 4	41,239 0 4	0 4 6
48	Nilgiris.	Nilgiris circle	951 9 0	739 3 6	3,593 10 5	...	2,342 9 9	1,191 0 8	...	3,533 10 5	4,328 0 13	0 13 1
49	Nilgiris.	Total of district	951 9 0	739 3 6	3,593 10 5	...	2,342 9 9	1,191 0 8	...	3,533 10 5	4,328 0 13	0 13 1
50	North Arcot.	Vellore circle	983 15 9	485 10 6	2,790 13 3	...	1,371 2 1	1,319 11 2	...	2,720 13 3	11,158 0 3	0 3 11
51	North Arcot.	Ramanathapuram circle	701 8 0	446 1 9	2,802 0 1	...	1,473 0 0	1,328 10 4	...	2,802 0 4	11,815 0 3	0 3 10
52	North Arcot.	Palani do.	829 5 4	480 1 7	2,661 6 11	...	1,198 1 11	1,463 5 0	...	2,661 6 11	9,550 0 4	0 4 5
53	North Arcot.	Trichy do.	389 10 11	695 4 10	4,629 10 5	...	1,493 14 11	3,069 11 6	...	4,529 10 5	18,016 0 4	0 4 0
54	North Arcot.	Total of district	3,171 8 0	2,080 2 8	12,713 14 11	...	5,301 8 11	7,213 6 0	...	12,713 14 11	59,989 0 4	0 4 0
55	South Arcot.	Salem circle	743 10 8	678 9 6	2,752 8 5	...	1,354 2 0	2,398 6 5	...	3,752 8 5	17,838 0 3	0 3 4
56	South Arcot.	Sivakasi do.	418 14 6	670 0 1	4,071 14 0	...	1,447 5 6	2,624 8 6	...	4,071 14 0	17,789 0 8	0 8 8
57	South Arcot.	Trichy do.	992 9 4	959 15 3	4,647 9 2	...	1,395 10 0	3,211 15 2	...	4,647 9 2	18,540 0 3	0 3 11
58	South Arcot.	Total of district	2,157 2 6	2,308 8 10	12,371 15 7	...	4,197 1 6	8,234 14 1	...	12,371 15 7	54,167 0 3	0 3 8
59	South Arcot.	Salem circle	833 15 2	690 3 6	3,833 11 7	...	1,249 5 6	2,044 6 1	...	3,233 11 7	15,850 0 3	0 3 3
60	South Arcot.	Sivakasi do.	561 7 3	650 12 1	3,263 12 8	...	862 2 11	1,397 9 9	...	3,263 12 8	20,267 0 2	0 2 6
61	South Arcot.	Total of district	1,394 12 5	1,340 15 7	7,096 14 5	...	2,111 7 7	3,441 15 1	...	7,096 14 5	36,117 0 5	0 5 9
62	South Arcot.	Salem circle	725 8 7	871 5 6	4,552 14 0	...	1,256 11 4	2,296 6 6	...	4,552 14 0	12,340 0 5	0 5 2
63	South Arcot.	Sivakasi do.	857 5 6	390 4 0	3,652 14 0	...	1,394 7 6	2,258 6 6	...	3,652 14 0	12,340 0 5	0 5 2
64	South Arcot.	Total of district	1,582 14 3	1,261 9 6	8,204 14 0	...	2,650 18 0	4,554 12 6	...	8,204 14 0	24,680 0 1	0 1 0
65	Tanjore.	Tanjore circle	308 11 9	462 5 4	2,444 9 11	...	1,249 11 3	1,191 14 8	...	2,444 9 11	12,199 0 3	0 3 2
66	Tanjore.	Negapattinam do.	230 1 2	705 3 8	3,214 10 1	...	1,101 3 11	2,023 6 2	...	3,214 10 1	16,893 0 3	0 3 1
67	Tanjore.	Palani do.	335 7 0	815 13 5	3,133 4 2	...	1,007 9 3	2,023 4 11	...	3,133 4 2	18,576 0 2	0 2 8
68	Tanjore.	Kumbakonam do.	248 13 0	727 10 10	2,797 9 6	...	866 5 6	1,931 4 0	...	2,797 9 6	16,808 0 2	0 2 8
69	Tanjore.	Total of district	1,143 2 3	2,711 1 3	11,593 11 8	...	4,404 13 11	7,189 13 9	...	11,593 11 8	64,586 0 2	0 2 1
70	Tanjore.	Sernadavai circle	287 12 1	530 12 2	8,092 15 8	...	1,126 8 5	1,877 7 3	...	3,002 15 8	19,517 0 2	0 2 8
71	Tanjore.	Sivakasi do.	634 14 7	633 8 9	3,361 3 2	...	1,300 11 3	2,060 7 11	...	3,361 3 2	22,434 0 2	0 2 5
72	Tanjore.	Kolpatti do.	613 13 5	596 10 3	2,907 13 5	...	1,248 4 1	1,659 11 3	...	2,907 13 5	19,542 0 2	0 2 5
73	Tanjore.	Total of district	1,548 8 1	1,774 15 2	9,272 2 3	...	3,704 7 9	5,567 10 6	...	9,272 2 3	61,463 0 2	0 2 5
74	Tanjore.	Trichinopoly circle	823 9 2	806 7 8	4,920 14 11	...	1,402 15 3	3,457 15 8	...	4,920 14 11	21,788 0 3	0 3 8
75	Tanjore.	Aravur do.	627 5 3	854 13 3	3,458 15 9	...	968 0 2	2,490 17 7	...	3,458 15 9	19,563 0 4	0 4 1
76	Tanjore.	Nannakkal do.	711 7 9	1,354 10 2	4,243 15 1	...	1,146 2 5	3,096 12 8	...	4,243 15 1	19,563 0 4	0 4 1
77	Tanjore.	Total of district	2,462 6 2	2,874 15 1	15,392 13 9	...	3,577 1 10	9,015 11 11	...	15,392 13 9	64,944 0 3	0 3 11
78	Vizagapatnam.	Vizagapatnam circle	754 13 11	1,833 8 2	5,380 2 4	...	1,366 9 1	4,023 9 3	...	5,380 2 4	45,967 0 1	0 1 9
79	Vizagapatnam.	Government vaccinators (Gudem hills).	144 0 0	188 0 5	682 0 5	...	1,002 0 5	...	...	682 0 5	1,467 0 7	0 7 3
80	Vizagapatnam.	Vizagapatnam circle	738 15 3	1,909 14 3	5,221 9 5	...	1,734 5 5	4,187 4 0	...	5,221 9 5	37,701 0 2	0 2 2
81	Vizagapatnam.	Parvatipuram do.	768 11 6	987 2 9	4,162 2 8	...	1,173 2 4	2,989 0 4	...	4,162 2 8	23,952 0 2	0 2 10
82	Vizagapatnam.	Total of district	2,466 8 8	4,908 15 7	15,105 14 10	...	4,196 1 3	11,259 13 7	...	15,465 14 10	1,08,547 0 2	0 2 3
83	Vizagapatnam.	Guntur circle	1,711 0 9	896 6 3	4,043 9 10	...	1,231 1 5	2,812 8 5	...	4,043 9 10	19,094 0 6	0 6 2
84	Vizagapatnam.	Tyler do.	1,191 0 4	617 3 8	4,332 0 1	...	1,640 9 11	2,692 6 2	...	4,332 0 1	15,475 0 4	0 4 5
85	Vizagapatnam.	Koraput do.	968 4 1	463 11 1	3,665 8 10	...	1,677 4 4	1,988 4 6	...	3,665 8 10	9,367 0 6	0 6 4
86	Vizagapatnam.	Total of district	3,910 5 2	1,789 5 3	11,991 2 9	...	4,547 15 8	7,443 3 1	...	11,991 2 9	34,837 0 5	0 5 6
87	Vizagapatnam.	Grand total of districts	61,721 15 2	59,873 1 5	3,10,449 15 8	...	1,19,978 5 0	190,471 10 8	...	3,10,449 15 8	12,93,161 0 3	0 3 9
88	Vizagapatnam.	Bangalore Cantonment	240 0 0	...	576 0 0	...	...	...	...	576 0 0	381 1 2	0 2 6
89	Vizagapatnam.	Secunderabad Cantonment	180 0 0	163 15 8	2,546 0 2	...	...	...	...	2,546 0 2	5,779 0 7	0 7 2
90	Vizagapatnam.	Total	420 0 0	68 15 8	3,171 0 2	...	...	...	...	3,171 0 2	6,140 0 6	0 6 3

* Includes cost of lymph supplied by King Institute of Preventive Medicine during 1915-16.

† Paid from Local, Abkari, etc., funds.

A--VACCINE DEPARTMENT".

Statement No. II showing the Cost of the Department in the Madras Presidency during the official year 1915-16--continued.

[illegible]

- * Includes one Vaccinatrix.
- + Medical Vaccinators.
- † Assistant Vaccinators.

8. **Clerks.**
Including 8 appointed for cholera duty.

N.B.—The average cost of each successful case was calculated on the total number of successful vaccinations performed by the special staff only, viz., Local Fund, Government, Municipal and Cantonment staffs (vide G.O. No. 1153-L, M.S., dated 4th September 1911).

A—VACCINE DEPARTMENT.

Statement No. II showing the Cost of the Department in the Madras Presidency for the official year 1915-16—continued.

Municipalities.		Expenditure—cont.				Paid from				Total.	Number of all successful primary vaccination and re-vaccination.	Average cost of each successful case.
		Travelling allowance.		Contingencies.	Total cost.	Paid from						
						Imperial funds.	Provincial funds.	Local funds.	Municipal funds.			
Number.		16	17	18	19	20	21	22	23	24	25	
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
1	Adoni	...	143 2 8	480 2 8	...	...	...	490 2 8	490 2 8	1,295	0 6 5	
2	Anantapur	...	18 15 2	146 2 7	...	...	...	146 2 7	146 2 7	200	0 11 2	
3	Anakapalle	...	87 2 8	222 4 8	...	...	...	222 4 8	222 4 8	630	0 5 8	
4	Belary	...	80 0 3	744 12 9	...	...	...	744 12 9	744 12 9	8,004	0 4 0	
5	Berhampur	...	58 7 11	296 7 11	...	...	...	296 7 11	296 7 11	1,655	0 2 10	
6	Bezwada	...	42 10 5	420 10 5	...	...	...	420 10 5	420 10 5	1,410	0 4 9	
7	Bhulpatam	...	36 10 3	182 7 9	...	...	...	182 7 9	182 7 9	566	0 5 5	
8	Calicut	...	278 2 4	823 12 3	...	...	...	823 12 3	823 12 3	5,469	0 2 3	
9	Cananore	...	92 2 8	332 2 8	...	...	...	332 2 8	332 2 8	1,579	0 3 4	
10	Chitradole	...	28 14 9	373 9 1	...	...	...	373 9 1	373 9 1	666	0 9 0	
11	Chidambaram	...	43 14 1	253 6 1	...	...	...	253 6 1	253 6 1	825	0 4 11	
12	Chingleput	...	47 10 1	191 10 1	...	...	...	191 10 1	191 10 1	795	0 3 10	
13	Cochin	...	45 2 7	267 10 4	...	...	...	267 10 4	267 10 4	1,241	0 3 5	
14	Cocanada	...	175 14 3	637 6 3	...	...	...	637 6 3	637 6 3	1,698	0 6 0	
15	Coimbatore	...	90 11 4	679 3 4	...	...	...	679 3 4	679 3 4	1,963	0 6 0	
16	Conjeevaram	...	117 9 9	419 9 9	...	...	...	419 9 9	419 9 9	1,786	0 3 11	
17	Cunoor	...	43 11 11	345 5 9	...	...	...	345 5 9	345 5 9	674	0 9 7	
18	Cuddalore	...	142 8 1	562 0 1	...	...	...	562 0 1	562 0 1	2,452	0 3 7	
19	Cuddalore	...	37 7 1	193 7 1	...	...	...	193 7 1	193 7 1	531	0 5 10	
20	Dindigul	...	65 3 10	241 15 11	...	...	...	241 15 11	241 15 11	871	0 4 0	
21	Ellore	...	154 0 5	598 5 8	...	...	...	598 5 8	598 5 8	2,741	0 3 6	
22	Erode	...	43 10 8	271 10 8	...	...	...	271 10 8	271 10 8	860	0 4 11	
23	Gudiyattam	...	39 8 8	173 11 2	...	...	...	173 11 2	173 11 2	751	0 3 8	
24	Guntur	...	92 1 9	609 13 2	...	...	...	609 13 2	609 13 2	2,262	0 4 4	
25	Hospet	...	40 15 1	160 15 1	...	...	...	160 15 1	160 15 1	882	0 2 11	
26	Karur	...	23 14 7	318 14 7	...	...	...	318 14 7	318 14 7	593	0 10 1	
27	Koovakal	...	10 4 9	65 4 9	...	...	...	65 4 9	65 4 9	175	0 6 0	
28	Kumbakonam	...	53 4 10	640 7 11	...	...	...	640 7 11	640 7 11	1,972	0 5 2	
29	Kurcol	...	90 6 8	281 6 8	...	...	...	281 6 8	281 6 8	1,172	0 3 10	
30	Madras	25 5 0	4,479 11 6	16,233 13 8	...	...	...	16,233 13 8	16,233 13 8	42,453	0 2 0	
31	Madura	...	1,924 5 7	1,924 5 7	...	...	...	1,924 5 7	1,924 5 7	15,247	0 2 0	
32	Manargudi	...	78 7 8	255 7 8	...	...	...	255 7 8	255 7 8	838	0 4 11	
33	Mangalore	...	47 13 6	703 13 6	...	...	...	703 13 6	703 13 6	2,334	0 4 5	
34	Mandipatam	...	140 11 1	489 11 10	...	...	...	489 11 10	489 11 10	1,455	0 5 6	
35	Mitavaram	...	37 11 2	233 9 1	...	...	...	233 9 1	233 9 1	1,236	0 3 6	
36	Mudiyal	...	27 1 8	167 1 8	...	...	...	167 1 8	167 1 8	845	0 3 9	
37	Nagapattinam	...	259 15 2	825 15 2	...	...	...	825 15 2	825 15 2	4,204	0 3 2	
38	Narasimhapet	...	32 2 8	173 15 10	...	...	...	173 15 10	173 15 10	433	0 6 5	
39	Nellore	...	50 0 7	411 2 7	...	...	...	411 2 7	411 2 7	1,591	0 4 5	
40	Onago	...	68 6 8	233 5 8	...	...	...	233 5 8	233 5 8	620	0 6 2	
41	Oracumund	...	* 98 18 8	322 13 8	...	...	...	322 13 8	322 13 8	976	0 5 4	
42	Palacottah	...	79 5 4	557 5 10	...	...	...	557 5 10	557 5 10	2,040	0 4 3	
43	Palghat	...	116 5 0	491 13 0	...	...	...	491 13 0	491 13 0	2,023	0 3 11	
44	Palani	...	123 0 4	485 7 0	...	...	...	485 7 0	485 7 0	4,904	0 1 6	
45	Palani	1 12 0	46 7 8	170 0 11	...	...	...	170 0 11	170 0 11	374	0 7 8	
46	Periyakulam	5 13 6	41 7 7	217 0 11	...	...	...	217 0 11	217 0 11	879	0 3 11	
47	Palni	...	15 2 5	207 2 5	...	...	...	207 2 5	207 2 5	357	0 9 3	
48	Proddatur	...	10 13 5	35 0 6	...	...	...	35 0 6	35 0 6	146	0 3 10	
49	Rajahmundry	...	75 11 1	592 5 1	...	...	...	592 5 1	592 5 1	2,803	0 3 8	
50	Salem	...	162 2 10	745 2 10	...	...	...	745 2 10	745 2 10	2,127	0 5 7	
51	Sarangam	...	58 9 7	296 9 7	...	...	...	296 9 7	296 9 7	1,189	0 3 11	
52	Savillipattur	...	60 7 11	172 7 11	...	...	...	172 7 11	172 7 11	1,077	0 2 7	
53	Tanjore	...	151 2 3	497 8 5	...	...	...	497 8 5	497 8 5	3,955	0 2 0	
54	Telicherry	...	31 1 7	267 1 7	...	...	...	267 1 7	267 1 7	1,100	0 5 4	
55	Tondli	...	54 2 7	234 2 7	...	...	...	234 2 7	234 2 7	759	0 4 11	
56	Tinnevely	...	135 10 0	579 10 0	...	...	...	579 10 0	579 10 0	2,122	0 4 4	
57	Trichinopoly	...	343 11 0	804 14 10	...	...	...	804 14 10	804 14 10	6,022	0 2 2	
58	Tripattur	...	16 13 4	220 13 4	...	...	...	220 13 4	220 13 4	602	0 5 10	
59	Tirupattur	...	10 12 5	201 12 5	...	...	...	201 12 5	201 12 5	557	0 5 9	
60	Tiruvallur	...	24 2 8	229 3 8	...	...	...	229 3 8	229 3 8	616	0 5 11	
61	Tiruvannamalai	...	44 11 7	238 3 7	...	...	...	238 3 7	238 3 7	881	0 4 4	
62	Tuticorin	...	100 0 8	489 0 1	...	...	...	489 0 1	489 0 1	5,117	0 1 7	
63	Vaniyambadi	...	29 5 9	179 5 9	...	...	...	179 5 9	179 5 9	691	0 4 2	
64	Vandavasi	...	12 3 6	75 1 11	...	...	...	75 1 11	75 1 11	317	0 3 10	
65	Vandavasi	...	161 6 2	639 15 1	...	...	...	639 15 1	639 15 1	1,764	0 3 10	
66	Vellore	...	62 12 7	321 15 3	...	...	...	321 15 3	321 15 3	1,837	0 5 3	
67	Vizagapatnam	...	164 1 7	514 1 7	...	...	...	514 1 7	514 1 7	3,582	0 2 4	
68	Vizianagaram	...	15 5 9	145 4 9	...	...	...	145 4 9	145 4 9	472	0 4 11	
69	Walaipet	...	42 4 0	42,913 12 10	...	...	...	42,913 12 10	42,913 12 10	153,615	0 4 4	
Total of Municipalities		62,184 3 2	70,036 6 5	3,36,534 12 8	576 0 0	1,19,978 5 0	1,35,063 10 10	42,913 12 10	3,55,534 12 8	1,456,856	0 3 9	
Grand Total		62,184 3 2	70,036 6 5	3,36,534 12 8	576 0 0	1,19,978 5 0	1,35,063 10 10	42,913 12 10	3,55,534 12 8	1,456,856	0 3 9	

* Excludes Rs. 41-0-0 being the amount realized by vaccinating children at their houses.
† Excludes Rs. 6-0-0 being the amount realized by vaccinating children at their houses and Rs. 14-3-1 being the cost of lymph supplied during 1914-15.
N.B.—The average cost of each successful case was calculated on the total number of successful vaccinations performed by the special staff only, viz., Local, Fund, Government, Municipal and Cantonment staff (vide G.O. No. 1158 L, M.S., dated 4th September 1911).

B—DISPENSARY VACCINATION.

STATEMENT No. III showing Dispensary Vaccination in the Madras Presidency for the official year 1915-16.

Districts.	Number of dispensaries in each district to which a vaccinator is attached.	Average number of vaccinators attached to dispensaries during the year.	Total number of persons vaccinated.	Average number of persons vaccinated by each vaccinator.	Total number of operations.	Primary vaccination.				Re-vaccination.			Percentage of successful cases in which the results were known.		Percentage of unknown cases to total operations.		
						Under one year.	Over one and under six years.	Total of all ages.	Unknown.	Total number of operations.	Successful.	Unknown.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Anantapur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bellary	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chingleput	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chittoor	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coimbatore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cuddapah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ganjām	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Godāvari (L.F. Amalapur hospital).	...	...	10	...	...	...	...	...	...	11	9	2	...	100.0	...	18.1	
Guntūr	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kistna	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurnool	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras (Municipal hospital, Kodakānal).	...	...	130	...	99	59	35	96	1	81	24	1	97.9	80.0	1.0	3.2	
Malabar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nellore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nilgiris	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Arcot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rāmnād	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Salem	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Arcot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
South Canara	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tanjore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tinnevely	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vizagapatam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Koraput	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	*140	...	*99	59	35	96	1	*42	33	3	97.9	84.6	1.0	7.1	

* Difference between number of operations and number of persons vaccinated equals 1. This shows secondary operations.

STATEMENT No. IV showing the number of persons primarily vaccinated and the number of those persons who were successfully vaccinated in the Madras Presidency in each of the undermentioned years.

	Persons primarily vaccinated.												1915-1916.	
	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.	Total number.	Number successfully vaccinated.
Government vaccinators	19,958	18,054	12,018	11,557	12,448	11,758	11,214	10,276	11,897	10,545	15,646	13,254	17,402	17,015
Local Fund	1,207,394	1,081,374	1,300,814	1,176,323	1,373,883	1,265,803	1,319,514	1,163,625	1,240,602	1,027,348	1,277,957	1,118,949	1,345,023	1,235,006
Cantonment	5,041	4,802	4,687	4,542	4,184	4,023	4,157	3,963	3,606	3,421	4,821	4,681	5,021	4,916
Zamindari	4,856	3,989	...	...	...	...	...	...	...	...	...	...	...	...
Municipal	116,654	110,989	108,261	102,615	111,015	105,193	111,754	102,748	111,070	108,028	103,170	99,018	110,076	106,611
Dispensaries	1,304	1,024	93	78	15	18	5	5	65	90	17	11	6	6
Medical Subordinates	3,038	2,280	2,121	1,528	369	214	411	229	497	322	206	118	139	114
Total	1,357,745	1,225,002	1,437,924	1,304,773	1,503,368	1,381,571	1,447,328	1,284,839	1,414,613	1,250,627	1,401,547	1,235,638	1,467,757	1,361,745

* As per G.O. No. 1158 L, Mis., dated 4th September 1911.

STATEMENT No. V showing Particulars of Vaccination verified by Inspecting Officers during 1915-16.

Districts.	Total number inspected.				Percentage of inspection to total number vaccinated.				Percentage of cases found successful to total number inspected.				Percentage of success as reported by Vaccinators.	
	By District Medical and Sanitary Officers and Civil Surgeons.		By Deputy Inspectors of Vaccination.		By Sanitary Assistants to District Medical and Sanitary Officers.		By District Medical and Sanitary Officers and Civil Surgeons.		By Deputy Inspectors of Vaccination.		By Sanitary Assistants to District Medical and Sanitary Officers.			
	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.	Primary vaccination.	Re-vaccination.		
Anantapur ...	27,916	1,452	596	62	15,582	452	55.8	33.2	87.9	10.0	73.7	38.0	92.9	78.9
Bellary ...	32,602	2,929	115	73	19,166	239	58.8	8.2	100.0	0.0	84.5	60.7	90.2	85.2
Chittoor ...	49,433	2,790	829	665	42,400	1,281	84.8	45.9	87.3	0.0	75.5	48.0	90.2	87.3
Chittoor ...	85,117	2,808	76,047	6,544	22,551	1,085	26.1	49.2	100.0	0.0	81.5	37.2	74.2	71.7
Chittoor ...	75,047	1,772	1,460	119	42,550	1,185	10.9	23.7	81.5	0.0	70.8	37.2	71.1	70.8
Chittoor ...	29,971	1,772	1,460	119	22,658	1,185	6.7	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	25,143	1,772	1,460	119	40,281	9,442	2.7	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	71,661	38,758	1,460	119	40,281	9,442	1.1	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	60,483	38,758	1,460	119	40,281	9,442	0.3	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	87,890	8,489	187	216	41,530	7,774	7.8	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	75,375	8,779	2,692	715	59,220	3,159	7.1	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	22,153	5,602	1,228	168	20,017	2,025	3.3	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	69,918	5,145	16	12	49,153	2,263	0.2	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	103,530	9,623	2,290	1,525	82,073	1,857	1.4	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	40,993	10,750	694	110	27,833	5,695	1.3	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	5,402	632	74	4	3,792	144	0.6	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	64,289	1,002	328	12	51,673	828	7.4	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	56,772	1,002	328	12	38,172	101	0.6	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	53,195	1,655	1,485	223	41,230	974	2.6	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	72,355	3,803	2,395	223	55,314	1,666	2.8	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	44,566	2,505	2,728	223	29,224	1,661	2.8	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	72,818	8,019	1,022	2,113	43,530	2,250	2.9	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	67,977	9,583	1,355	684	45,863	1,195	3.5	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	65,482	2,506	3,587	1,360	45,863	3,302	0.1	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	74,092	54,800	186	68	44,064	20,254	0.4	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Chittoor ...	85,500	3,550	331	15	22,456	2,570	0.9	0.0	80.9	0.0	44.9	75.4	85.8	87.7
Total	1,461,848	28,302	10,648	10,648	955,788	86,424	4.9	3.27	85.3	0.1	77.7	65.5	88.4	70.3

* Excludes cases performed in cantonments.

† Information could not be furnished as the post of Deputy Inspector of Vaccination has been abolished.

STATEMENT No. VI showing the Number of Vaccinations performed in Municipal Towns on children under one year of age (G.O. No. 1534 L., dated 6th December 1900.)

Municipalities.	Number of births available for vaccination during the year 1915-1916.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending March 1916.	Date of extension of compulsory vaccination to municipalities.
Adoni ...	1,782	154	718	1st Dec. 1886.
Anantapur ...	849	75	107	1st Jan. 1896.
Anakapalle ...	685	104	362	1st Nov. 1891.
Bellary ...	1,484	237	824	1st Jan. 1892.
Berhampur ...	918	221	453	15th April 1891.
Bezavada ...	1,178	370	559	1st May 1892.
Bimlipatnam ...	809	12	172	1st Jan. 1894.
Calicut ...	3,021	360	1,836	1st Oct. 1891.
Cannanore ...	966	158	564	1st June 1891.
Chicacole ...	576	105	329	1st Dec. 1890.
Chidambaram ...	638	147	339	1st July 1887.
Chingleput ...	492	138	363	1st April 1897.
Cochin ...	646	129	631	1st Jan. 1894.
Cogawada ...	1,703	334	701	1st June 1890.
Coimbatore ...	2,335	622	863	1st Jan. 1889.
Conjeevaram ...	2,268	331	1,104	1st Jan. 1891.
Coonoor ...	876	83	141	1st April 1887.
Cuddalore ...	2,029	659	1,107	1st Aug. 1896.
Cuddapah ...	488	68	274	15th July 1888.
Dharapuram ...	...	...	...	1st Feb. 1818.
Dindigul ...	1,367	367	709	10th July 1886.
Ellore ...	1,986	698	1,100	1st June 1888.
Ellore ...	588	95	268	1st April 1891.
Gadipattam ...	692	103	415	1st June 1889.
Guntur ...	1,639	467	842	1st Jan. 1914.
Hospet ...	523	67	292	1st April 1892.
Karur ...	410	81	230	1st Sept. 1900.
Kodakulam ...	141	29	100	1st April 1889.
Kumbakonam ...	1,768	425	852	1st Aug. 1889.
Kurnool ...	1,092	218	680	1st July 1891.
Madura ...	4,822	1,154	3,307	1st Jan. 1880.
Manuargudi ...	757	176	380	1st Dec. 1890.
Mangalore ...	1,433	194	1,153	1st Sept. 1891.
Masulipatam ...	1,344	286	781	1st May 1885.
Māyavaram ...	873	256	484	1st Oct. 1886.
Nandyal ...	627	83	303	1st Jan. 1900.
Narasaraopet ...	806	82	115	1st Apr. 1916.
Negapatam ...	1,655	422	2,322	1st July 1886.
Nellore ...	1,145	243	378	1st Aug. 1886.
Ongole ...	511	194	289	1st Dec. 1885.
Ootacamund ...	702	92	442	1st July 1887.
Palacottah ...	1,580	435	762	1st May 1887.
Palghat ...	1,838	328	1,183	1st Jan. 1883.
Parlākimodi ...	618	130	348	1st Dec. 1890.
Peddapattam ...	155	27	55	1st Apr. 1916.
Periyakulam ...	1,076	212	722	1st Feb. 1891.
Patni ...	708	125	189	1st Dec. 1891.
Prodattur ...	73	16	28	1st Sept. 1915.
Rajahmundry ...	1,829	422	439	1st Jan. 1886.
Salem ...	3,074	596	1,659	1st May 1891.
Srirangam ...	682	161	324	1st July 1888.
Srivillipattur ...	1,136	227	784	1st Jan. 1896.
Tanjore ...	2,187	455	1,144	1st July 1893.
Tenali ...	582	173	274	1st April 1910.
Tellicherry ...	993	158	635	15th Jan. 1892.
Tinnevely ...	1,958	593	1,005	1st July 1886.
Trichinopoly ...	4,002	845	2,361	1st Aug. 1890.
Tirupattur ...	602	162	317	1st July 1891.
Tirupati ...	535	107	316	1st Mar. 1890.
Tiruvallur ...	532	135	180	1st Oct. 1913.
Tiruvannamalai ...	945	207	382	15th Dec. 1897.
Tuticorin ...	1,340	331	797	1st May 1892.
Vaniyambadi ...	777	141	451	1st May 1889.
Vellore ...	2,244	460	1,049	1st Jan. 1897.
Virudapatti ...	378	70	212	1st Sept. 1915.
Vizagapatam ...	1,371	271	587	1st Aug. 1890.
Vizianagaram ...	1,246	205	695	1st Jan. 1891.
Walajpet ...	439	84	235	20th June 1892.
Total ...	78,024	17,375	44,720	

* No information could be furnished as the necessary vaccination staff was not entertained.

STATEMENT No. VII showing Inspection Work done by the Deputy Inspectors during the year 1915-16.

District.	Circle.	Number of inspecting officers.			Number of villages visited.			Total number of cases vaccinated.	Number of days spent on inspection duty.	Number of cases verified.			Total number of cases inspected by Deputy Inspectors of all sorts.	Total number of successful cases as reported by Deputy Inspectors.	Percentage of successful cases to the total number inspected as reported by Deputy Inspectors.	First-grade Deputy Inspectors.	Second-grade Deputy Inspectors.	Third-grade Deputy Inspectors.	Proportion per cent of inspection to total number vaccinated.
		First-grade Inspectors.	Second-grade Deputy Inspectors.	Third-grade Deputy Inspectors.	First-grade Deputy Inspectors.	Second-grade Deputy Inspectors.	Third-grade Deputy Inspectors.												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Anantapur.	Anantapur	1					422	13,018	287			7,747	7,747	5,623	726				
	Penakonda			1			437	16,756	241			8,327	8,327	6,061	727				
Bellary	Bellary				188			16,163	196	8,181				6,282	708	506			
	Hospet			1			320	14,187	205			11,224	11,224	10,145	904				
Chingleput	Chingleput					999		17,424	250		16,211		16,211	11,089	719				
	Sandipet		1		680			17,025	211	12,849			12,849	9,102	708				
Chittoor	Ponnuri		1			672		16,054	238		14,681		14,681	10,613	725				
	Chittoor			1		1,326		17,040	228		11,188		11,188	8,785	785				
Coimbatore.	Karvetnagar			1			842	23,848	236			13,448	12,448	10,947	879				
	North Coimbatore					390		20,233	280		11,288		11,288	6,842	606				
Cuddapah	South do.		1				221	19,445	218			10,505	10,505	8,960	828				
	East do.				902			23,724	266	12,387			12,387	7,373	597				
Gadchhari	Central do.		1		389			20,506	231	10,042			10,042	7,823	779				
	Cuddapah			1		265		18,131	256		8,246		8,246	4,685	568				
Ganjām	Peddatur			1		231		10,054	243		8,005		8,005	5,347	668				
	Silhoat							11,844	109					7,874	687				
Godavari	Berhampur			1		703		17,675	257		10,008		10,008	8,872	836				
	Chiccacole			1				16,199	209					4,904	815				
Ganjām	Ganjām Hill Tracts			1			400	13,339	181					4,001	765				
	Aska			1			558	14,571	216			8,461	8,461	6,473	798				
Godavari	Parikimedi			1			621	13,575	177			11,124	11,124	8,873	798				
	Purushottapur			1			551	15,561	260			12,125	12,125	9,867	813				
Godavari	Comnada			1			353	15,947	224			13,426	13,426	9,190	679				
	Rajbunderdy			1			270	30,504	300			18,061	18,061	11,860	627				
Godavari	Polarasa			1			225	6,910	266			1,081	1,081	2,450	620				
	Peddapur			1			206	34,266	310			17,482	17,482	10,903	482				
Godavari	Bhadracliam			1		440		4,697	155	3,381				1,632					
Guntur	Guntur	1						20,767	277	18,024			18,024	15,180	842				
	Naravarepet		1				261	23,981	220			15,184	15,184	12,140	800				
Kistna	Bapatla							19,466	182		15,879		15,879	12,435	815				
	Elore		1					28,987	258		20,619		20,619	17,947	871				
Kistna	Masulipatnam		1		329			23,346	280	21,439			21,439	16,608	774				
	Xarasapur			1		184		25,325	256		20,621		20,621	16,021	800				
Kornel	Cumbur				414			15,517	281	10,338			10,338	8,111	739				
	Kurum			1			441	17,109	232			11,525	11,525	8,000	694				
Madras	Madras																		
	Madras																		
Madras	Dindigul				411			23,828	215	20,377			20,377	14,559	710				
	Madras		1					19,372	302		15,965		15,965	10,787	674				
Madras	Udumalpet							19,300	208		15,069		15,069	12,641	839				
	Tellicherry				267			25,632	270	17,951			17,951	14,966	835				
Malabar	Calicut		1				161	25,386	204			16,291	16,291	12,473	764				
	Palghat		1				206	50,351	218			22,806	22,806	17,455	774				
Malabar	Malabar			1			138	51,441	223			26,882	26,882	23,060	858				
	Karali				410			15,551	201	10,442			9,377	6,458	686				
Nellore	Gudur		1					17,897	210			13,709	13,709	7,911	757				
	Ilankudi			1			426	19,665	179			15,709	15,709	9,234	678				
Nizams	The Nilgiris			1			571	4,467	251			3,926	3,926	3,780	982				
	Vellore			1			484	14,620	240			13,311	13,311	11,002	827				
North Arcot.	Rayapattai		1					15,885	157	13,986			13,986	11,305	813				
	Pear			1		255		13,919	227			12,113	12,113	9,383	783				
North Arcot.	Trichipattin			1			440	21,059	257		13,109		13,109	11,756	897				
	Sivallipattin		1					19,142	251		16,511		16,511	15,337	947				
Ramanad	Madras (Old Panamagudi)		1					18,691	207		9,968		9,968	9,967	339				
	Trichipattin			1				19,114	252		11,794		11,794	11,068	937				
Salem	Salem (Central)	1						17,374	203	10,504			10,504	8,412	801				
	Salem			1			174	22,011	212			20,738	20,738	18,464	891				
Salem	Hosur			1			531	18,208	304			11,071	11,071	9,366	841				
	Cuddalore							18,062	235		11,770		11,770	9,612	819				
South Arcot.	Villupattinam			1			308	14,027	223		10,387		10,387	8,129	878				
	Trichipattin			1			211	13,776	189		8,218		8,218	6,127	745				
South Arcot.	Madhavaram			1			368	13,919	228		10,720		10,720	7,876	713				
	Villupattin					759		17,742	223	15,866			15,866	12,150	762				
South Arcot.	Northern Circle			1				15,008	246	10,145			10,145	8,769	864				
	Central do.					163		14,145	232	9,664			9,664	8,405	869				
South Arcot.	Southern do.						172	16,754	304		11,506		11,506	9,644	838				

* Information could not be furnished as the post of the Deputy Inspector of Vaccination has been abolished.

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Government of Madras.

LOCAL AND MUNICIPAL DEPARTMENT.

Statement No. VII showing Inspection Work done by the Deputy Inspectors during the year 1915-16 - continued.

District.	Circle.	Number of inspecting officers.			Number of villages visited.			Total number of cases vaccinated.	Number of days spent on inspection duty.	Number of cases verified.			Total number of cases inspected by Deputy Inspectors of all sorts.	Total number of successful cases as reported by Deputy Inspectors.	Percentage of successful cases to the total number inspected as reported by Deputy Inspectors.	Proportion per cent of inspection to total number vaccinated.		
		First-grade Inspectors.	Second-grade Deputy Inspectors.	Third-grade Deputy Inspectors.	First-grade Deputy Inspectors.	Second-grade Deputy Inspectors.	Third-grade Deputy Inspectors.			First-grade Deputy Inspectors.	Second-grade Deputy Inspectors.	Third-grade Deputy Inspectors.						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Tanjore	Tanjore ...	...	1	...	...	276	...	12,844	235	...	9,013	...	9,013	7,975	855	...	702	...
	Negarcotam ...	...	...	...	...	...	...	17,849	234	12,014	...	...	12,014	10,906	915	...	...	638
	Pattinikottai ...	...	...	1	...	...	607	19,558	272	...	...	13,464	13,464	12,935	961	...	...	615
	Kumbakonam ...	...	...	1	...	...	417	18,415	270	...	...	11,319	11,319	8,686	767	...	...	...
Tinnevely	Shermadavi ...	...	...	...	...	298	...	22,553	241	...	15,521	...	15,521	13,032	842	...	588	...
	Sivakulam ...	...	1	...	...	...	...	26,298	232	18,332	...	...	18,332	18,059	713	...	...	...
	Koipatti ...	...	1	...	1,085	298	...	21,513	232	...	...	...	13,208	10,620	804	...	614	...
	Trichinopoly ...	...	...	...	...	...	...	24,236	231	15,174	...	...	15,174	13,687	902	...	...	...
Tiruchinopoly.	Arivalar ...	...	...	1	...	...	904	16,694	268	...	...	14,131	14,131	11,974	826	...	...	...
	Namakal ...	...	...	1	...	...	676	20,053	247	...	...	16,860	16,860	14,404	653	...	...	...
	Vizagapatnam ...	...	...	...	...	445	...	52,819	294	...	29,839	...	29,839	22,731	749	...	567	...
	Vijayanagar ...	...	...	1	...	...	360	44,052	263	...	...	19,106	19,106	17,723	607	...	...	495
Koraput	Parvatipuram ...	...	...	1	...	...	466	26,350	211	...	...	15,365	15,365	10,464	681	...	...	...
	Ganapur ...	...	...	1	...	...	565	10,970	238	...	...	6,877	6,877	5,394	784	...	...	626
	Jeypure ...	...	...	1	...	...	...	17,932	290	...	10,067	...	10,067	7,623	757	...	...	...
	Koraput ...	...	...	1	...	955	...	10,390	314	...	8,082	...	8,082	6,862	440	...	...	...
	Total	18	25	37	8,929	12,904	14,118	1,577,450	13,043	211,173	336,164	491,865	1,022,222	818,363	785	636	638	636

G.O. No. 1299 L., 22nd September 1916

Vaccination

Report on the working of the — department in the Madras Presidency during the year 1915-16 reviewed.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—the following paper :—

Letter—from Major W. A. JESTICE, M.B., C.M., D.P.H., I.M.S., Sanitary Commissioner, Madras.
To—the Secretary to Government, Local and Municipal Department.
Dated—the 2nd August 1915.
No.—D. 431/V.

ABSTRACT.—Submitting report on the working of the Vaccination Department in the Madras Presidency for 1915-16.

Order—No. 1299 L., dated 22nd September 1916.

The report on vaccination, which was due with the Government on the 1st July, was received on the 5th August. This was due to the absence of the Deputy Sanitary Commissioner on privilege leave in consequence of ill-health.

2. The total number of vaccine operations performed during the year exceeded that for 1914-15 by 112,248, or 6.6 per cent. This result is attributed to the prevalence of small-pox in several parts of the Presidency and to better work on the part of the vaccination staff. Large increases occurred in the districts of Vizagapatam, Malabar and Tanjore. The districts which showed marked decreases were Guntur, Salem and Kurnool. The fall in Guntur is attributed to the large number of operations performed in the two previous years, when the district was in the throes of a severe small-pox epidemic. The fall in Salem is partly accounted for by the prevalence of plague, while in Kurnool there appear to have been difficulties in recruiting vaccinators.

3. The outturn of work in the municipalities showed an increase of 49,515 cases or 33.0 per cent, over the figure for the previous year. Madras, Parlakimedi and Tuticorin showed marked increases, while Salem, Ellore, Palni, Ootacamund and Calicut showed comparatively large decreases. The chief causes assigned for the decreases are prevalence of plague, absence of small-pox and a fall in the birth-rate.

4. In the case of re-vaccinations alone there was an increase of 52.5 per cent. The increase in local fund areas amounted to 45,770 cases and in municipalities 49,584, the City of Madras contributing as many as 36,831. Large increases occurred in the districts of Vizagapatam, Gōdāvari, Ganjam and Nellore, and in the case of municipalities the increases in Parlakimedi and Tuticorin are noteworthy. Small-pox accounted for 21,463 deaths. This is 5,160 less than in 1914-15, but the prevalence of small-pox in the two years is undoubtedly the main cause of the increased resort to re-vaccination.

5. The reported percentage of success fell from 90.8 to 87.7 in the case of primary and secondary vaccination and from 79.1 to 75.7 per cent in the case of re-vaccination. This is attributable in a small measure to an experiment (initiated in the previous year and since discontinued) in storing vaccine pulp in the raw condition and grinding and mixing it with lanoline as required for issue; but mainly to bad work on the part of the vaccinators and especially to their inveterate habit of keeping the paste till it is no longer fit for use. In the three districts of Chingleput, Coimbatore and Gōdāvari the results were especially bad. The Presidents of the District Boards concerned will be requested to make a searching enquiry into the causes of this matter and to submit special reports on the causes of the bad results. The total number of successful operations per mille of the population was returned at 33.3 in local fund areas and 5.1 in municipalities against 33.5 and 5.0, respectively, in 1914-15.

6. The average cost of each successful operation in the case of local fund vaccinators was the same as in the last year, viz., As. 3-8. In the case of the municipal vaccinators it fell from As. 4-11 to As. 4-4, in spite of a slight increase in the cost of establishment. There appears to be room for farther reduction since it should be cheaper to carry out these operations within the limits of a single town than it is when the vaccinators have to cover the whole area of a district. The cost was in excess of As. 5 in the districts of Chingleput, Koraput, Gōdāvari and Cuddapah and in excess of As. 8 in the municipalities of Anantapur, Karur, Coonoor, Chittoor and Peddapuram. The local authorities concerned should analyse these high figures and see whether a reduction is not feasible.

7. The number of children under one year of age successfully vaccinated fell by 27,867. The districts in which a large decrease was noticeable were Gōdāvari, Kurnool, Ganjam and Vizagapatam. Similar decreases occurred in Madras and in the Calicut, Salem and Trichinopoly municipalities. The Government note with regret that in Nellore and Palni less than one-half of the children available for vaccination according to the registers of births were protected against small-pox, which is one of the common causes of infant mortality.

8. The Deputy Inspectors of Vaccination showed 68.1 per cent of the total number of primary and secondary vaccinations in all areas except the cantonments as having been verified by them, and 32.7 per cent of the number of cases re-vaccinated. The District Medical and Sanitary Officers verified a small percentage of primary and secondary operations. In Bellary, Coimbatore, Guntur, Madras and Rāmnād the total number of cases verified by them was less than 1 per cent of the total number of operations. The verification work done by the Sanitary Assistants to the District Medical and Sanitary Officers was less than 2 per cent in Gōdāvari and Guntur and less than 1 per cent in North Arcot, Kistna and Tanjore. The attention of the President, District Board, Gōdāvari, will be called to the coincidence of neglect of control by the Sanitary Assistant with the extraordinarily bad results above commented on.

9. The proposals of the district boards for the re-organization of the vaccination staff continued to be received throughout the year, those from Guntur being still due. The scrutiny of the remainder is in progress and it is hoped that it will be possible to issue orders at an early date.

(True Extract.)

C. G. TODHUNTER,
Acting Secretary to Government.

To the Sanitary Commissioner.
 „ the Sanitary Engineer.
 „ the Surgeon-General.
 „ Medical Section.
 „ Home Department (Judicial).
 „ Revenue Department.
 „ Assistant Quartermaster-General, 9th (Secunderabad) Division (with C.L.).
 „ Director of Public Instruction.
 „ Accountant-General.
 „ President, Corporation of Madras.
 „ all Collectors.
 „ all Presidents of District Boards.
 „ all Chairmen of Municipal Councils.
 Editors' Table.



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